# The Builder.

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Design for a Clock-Tower: Submitted for the Tite Prize.—By Mr. D. McKay Stoddart ..... *Double-Page Photo-Litho*
Cold Ash, near Newbury.—Mr. Leonard Stokes, F.R.I.B.A., Architect ..... *Double-Page Photo-Litho.*
House at Windermere: the Hall.—Mr. M. H. Baillie Scott, Architect ..... } *Double-Page Ink-Photo.*
Staircase and Gallery, Kelly House.—Mr. W. Leiper, F.R.I.B.A., Architect ..... }
A Group of Cottages, Port Sunlight, Cheshire.—Messrs. Wilson & Talbot, Architects ..... *Single-Page Ink-Photo.*
Ifield Wood, Sussex.—Mr. T. E. Pryce, A.R.I.B.A., Architect ..... *Single-Page Ink-Photo.*


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## *Housing and Sanitation in Rural Districts.*

THERE is no question that the housing and sanitation of the dwellings of the working classes is not only more and more engaging public attention, but is becoming more and more important. The two subjects are inseparably connected. Bad and crowded dwellings are insanitary. If insanitary dwellings are allowed unchecked, a better class of dwellings will not be built. That in many rural districts the dwellings of the working classes are not sufficiently numerous, that many which are inhabited are not up to a proper standard, is a matter of common knowledge; it requires no prolonged investigation to establish the fact. On the other hand, it is desirable not to take too pessimistic a view of this subject. In many parts of England, more especially in the north, north-west, and northern Midlands, the state of rural dwellings is better than in other parts of the country. The sanitation of many of these more substantial and roomy dwellings is, however, by no means always as good as it should be. In our own columns we have from time to time to refer to the Reports of the Local Government Board in respect to such points as deficient or polluted water supply. On the other hand, well-built and fairly-roomy cottages, with good gardens, are healthier dwellings in a general sense than the ill-built, dilapidated, and very small cottages which are yet unhappily to be found, more especially to the south, south-west, and south-east of England. The fact of the insufficiency of dwellings in the rural districts being underrated, as well as the fact that many of those which are in existence are below a reasonable standard of general healthiness and sanitation, the practical question arises whether there are any means by which an improved state of affairs can be hastened.

At present the supply of cottages in the rural districts is from private individuals. And here it is well to bear in mind an important fact. Landed proprietors are often blamed for bad cottages. There is no doubt, however, that the worst dwellings are those owned by small rack-renting proprietors, who try to get as much rent as they can from their tenants, and to do as little as possible to the houses. Undoubtedly many landed proprietors who could afford to have better dwellings on their estates than are upon them fail in this respect. The rural labourer is an uncomplaining person, and there is an unspoken but distinctly existing feeling among the well-to-do classes in the rural districts that the labourer is sufficiently well housed. The importance from a moral and a sanitary point of view of good dwellings is overlooked. The public-house is often frequented because the home is too small and insufficient for the accommodation of those who live in it. No one expects the rural labourer to live in a mansion; but there is not the least doubt that he has been expected to live in dwellings distinctly inferior to those occupied by respectable artisans in the towns. Bad dwellings have, indeed, been one of the causes of the rural emigration to the cities. The younger men and women know that they can be better housed in the towns. They do not agitate for improved dwellings in villages, but move away to the cities, leaving those to inhabit the inferior country dwellings who are less spirited and more easily satisfied.

The insufficiency of the houses in the rural districts has in one respect a close connexion with sanitary deficiencies. It is often said that the local inspectors are lax in the performance of their duties. There cannot be a doubt that over and over again houses which should be condemned are left untouched because the inspector knows that, if demolished, the inhabitants will be without homes; they must remain where they are or lose their work. Rather, therefore, than disturb these people, the inspector overlooks defects. The occupiers themselves are profoundly careless of sanitary precautions, and infinitely prefer an unwholesome dwelling within reach of their work to a healthy house at a greater distance.

Thus there can be no doubt that the main problem is how to increase in rural districts the supply of wholesome dwellings. From a commercial point of view, there is little to tempt the investment of money in cottage building; the rate of return at the best is low, the trouble of rent-collecting is considerable. In a country such as England, where it has become a national habit to leave things so much to individual effort, there is always a striking breakdown if the incentives to individual effort are insufficient. This is what is occurring in regard to rural dwellings. To erect cottages is an unpaying affair; individual effort ceases; consequently, houses are insufficient and sanitation is defective.

The time has therefore come—we say this with a good deal of reluctance—when some drastic system must be introduced into rural districts under which cottages must be built and owned by a public authority. The principle has already been sanctioned both for town and country, and the Small Dwellings Acquisition Act of last Session, under which Local Authorities are empowered to advance money to enable persons to acquire the ownership of small houses, is based on the same principle, although the measure in which the individual is assisted is somewhat different in its form. The reason for the intervention of a public authority can only be because in a particular district house accommodation for the working people of such district is inadequate. The first point to be definitely settled, therefore, is whether there is a reasonable demand for more dwellings than exist; if such demand and such absence is ascertained, then a Local Authority should have statutory power to purchase land and build on it working men's dwellings.

That Local Authority—we have no hesitation in saying—should be the County Council. There must be no small local body open to local influences either for or against the enlarged housing. The County Councils are

showing themselves every year to be capable bodies—conservative perhaps, but yet with a good deal of the spirit of improvement in them. The County Council should either proceed on its own account or be set in motion either by the Parish or District Council, or by two or more individuals. In other words, the initiative should be an open one. As to what may be termed the mode of inquiry, that is a machinery which would be easily arranged. And once the power is entrusted to the County Councils, we have little doubt that the method of working would present no difficulty. Moreover, any such powers would, probably, also have an indirect effect. There are landed proprietors who would find in the mere existence of the power an incentive to build on their own account. Without being unduly severe on landed proprietors, there cannot be a doubt that much increased cottage accommodation could be provided out of income, if the possessors of such income would be willing to forego some expensive luxuries. A couple of cottages can be built for 300*l*. There are many land-owners who keep race-horses, large establishments, a stud of hunters, a town house, and so on, who—with a very slight drawing in of expenditure—would be able to erect cottages in sufficient number.

It may be said that already there is power for a public authority to erect cottages in rural districts. The third part of the Housing of the Working Classes Act, 1890, empowered a Rural Sanitary Authority to adopt this third part, after obtaining a certificate from the County Council. In other words, as the phrase "lodging houses for the working classes" means, according to Section 59, "separate houses or cottages for the working classes," and as the Local Authority may acquire land and build cottages thereon and also manage them, there is already power in a public body to do what is now advocated. But this part of the Act of 1890, so far as regards rural districts, has been a dead letter, and therefore it is obvious that the power given by the statute must be transferred to more enlightened bodies, and the procedure and initiative simplified. So long ago as 1890 the Legislature clearly intended that a Rural Sanitary Authority should supply cottages; witness the words of the Act, "accommodation is necessary for the housing of the working classes, and there is no probability that such accommodation will be provided without the execution of this part of this Act." But the Act in this respect has, we repeat, been absolutely a dead letter, just as the previous part of it has, which empowered the Local Authority, on the representation of the Medical Officer of Health that a dwelling-house is in a state so injurious to health as to be unfit for human habitation, to order its demolition. If ever a statute was passed with good intention this one was. If it had been carried into force, rural England would be covered with healthy cottages. But obviously some other and better machinery is required in order to accomplish this object. There has been fear of high rates, prejudice, class antagonism, an inappreciation of the importance of proper sanitation, and, we must add, indifference on the part of many rural labourers arising from want of self-respect through deficient education, so that they are now no better housed than they were twenty years ago.

Once these cottages were erected, the sanitary inspection should become closer than it is at present. That the Medical Officer of Health should be appointed by the County Councils we have no doubt. By that means we should get rid of the present multiplicity of these officials with miserable salaries, which are merely little bonuses, as a rule, to their ordinary professional income. There would be in each county one or more medical officers of health—well paid, and giving to the work their entire attention. Again, also, the local inspectors should be more qualified than they often are at present. They should be educated in the rudiments of sanitation, and have a knowledge of plumbing and building. But these two last points, though closely connected with the question of the housing of the working classes in the rural districts, do not depend on the legislation which is required to enable Local Authorities to acquire land and build cottages; and this legislation, it is clear, is the only remedy for the existing state of matters in many parts of England.

## PATENTS AND COMPULSORY LICENCES.*

THE idea which is popularly held in regard to patents is that those who obtain them are anxious, above all other persons, to make as much use of them as possible. But it does not always follow that patentees desire to use their patents, any more than that the purchaser of some particular thing, such as an iron mine, intends to work it. It is common for persons to buy property to prevent others from competing with them. But it is public policy to grant patents for two purposes—the advantage of the patentee and of the public. On the one hand, the patentee is given a specified time within which he alone can reap the fruits of his ingenuity, labour, or thought; on the other hand, his invention, after the lapse of this particular period, becomes public property. During the continuance of that period it is assumed that the public as well as the patentee is to have the advantage of the patent. It was on these principles that the Legislature went when passing the Patents Act, 1883. In the statute under the head of "Compulsory Licences" there is to be found the twenty-second section, which runs as follows: "If on the petition of any person interested it is proved to the Board of Trade that by reason of the default of a patentee to grant licences on reasonable terms (*a*) the patent is not being worked in the United Kingdom; (*b*) the reasonable requirements of the public with respect to the invention cannot be supplied; or (*c*) any person is prevented from working or using to the best advantage an invention of which he is possessed, the Board may order the patentee to grant licences" on such terms as it may consider just. If this section is carefully read it is obvious that it gives to the Board of Trade very large powers to oblige patentees to make the best use of their inventions in the public interest. But, as in the case of many other enactments apparently useful, it has the disadvantage of not being easily worked; for a moment's reflection will show that it would be easy for a patentee to bring forward all kinds of specious reasons against the employment by the Board of Trade of its compulsory powers. But once set the power in motion, and it is of a formidable kind—much more so than is generally known; though for that matter it is doubtful if the far-reaching importance of this section is at all realised.

Yet from time to time the section has been set in motion. We will give an instance of its successful employment: "The patented invention related to an improved attachment to newspaper printing machines . . . . and the use of the attachment was monopolised by a particular evening paper. The exclusive command of the invention was, of course, of great commercial importance to the conductors of the privileged paper. This, however, it was contended, placed an undue restriction upon the public enjoyment of the benefit of the invention, since the readers of other newspapers could get no advantage from the added facilities in the dissemination of news. The referee adopted this view, and an order was made by the Board of Trade for the licence asked for." It would not be easy to find a better instance of the action of the section than this. Apply this example to inventions in regard to building materials, and it becomes obvious that its development might lead to some startling results. That in each case of a demand for a licence on the ground that the reasonable requirements of the public cannot be supplied, there must arise, more or less, a question of fact, is pretty clear. On the other hand, the power is so wide and important that it is a matter of regret that it is not exercised by a Judge of the High Court, so that some series of precedents, based on some generally-accepted principles, might be laid down; because it seems clear from the newspaper case to which allusion has been made that it would not be difficult for commercial rivals to make use of this particular branch of the Patents Act for their own purposes under the guise of assisting the public. Suppose, for instance, an invention for some particular kind of lock, and that the patentee had disposed of the right to sell it to one firm of builders only, naming a royalty which was sufficient remuneration. Clearly some very difficult questions would arise if this firm of builders decided not to supply the locks except on doors which they put up. We give this assumed case, because the more the section is considered, especially in the light of the case referred to, the more difficult it seems to find a place where its application stops.

Practically it seems to go as far as this, that a patent, though the inventor is allowed to receive remuneration as against all other persons, must yet, however, be placed within the reach of the public generally at a reasonable price. The working of the Act under this head has as yet been insufficient to justify us in laying down any rules in regard to it, based as these must be on a few semi-judicial decisions or orders of the Board of Trade. Its mere existence may perhaps be sufficient to give the public a reasonable enjoyment of patented inventions. Be that as it may, the existence of the section—in its far-reaching application—cannot be too well known both to patentees and to the public

* "Compulsory Licences under the Patent Acts." By J. W. Gordon, Barrister. London: Stevens & Sons, Limited. 1899.

## NOTES.

The Holborn to Strand Improvements.

WE print on another page in full the proposals of the London County Council for the architectural control of the buildings to be erected in the new street from Holborn to the Strand, and those in the crescent and the straight alignment north of the Strand. It is a matter for congratulation that the County Council should have recognised the importance of endeavouring to secure the best architectural treatment of such important streets; but there are two points which certainly require reconsideration in their proposals. One is the suggestion that the style of the buildings should be "Palladian freely treated." In the first place, it is difficult to define what "Palladian" means; it may mean half a dozen things to half a dozen different people. In the second place, is it advisable to tie down the architects, who are to compete, to any nominal style at all? We think decidedly not, and we should expect to find that the Institute of Architects, who have been consulted by the County Council, would be of the same opinion. The other point is as to the treatment of the proposed crescent. A crescent is a special feature—one may say an architectural feature, in itself; and we are most strongly of opinion that a crescent, to get its full effect, should be treated as one homogeneous design, not as a collection of houses of possibly varying heights and varying features. The case of a crescent is quite different from that of an ordinary street. It is a form adopted for ornamental reasons, and therefore demands a special treatment; half its effect depends on the unbroken sweep of the skyline, and this would be entirely destroyed unless a homogeneous design were adopted. It would be quite easy to include in such a design houses of two or more different widths of frontage, so as to meet to some extent the varying requirements of tenants or purchasers.

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Drawings of the Paris Exhibition.

THE collection of drawings exhibited at the Institute in illustration of M. Lucas's paper on the buildings of the Paris Exhibition, while it exhibits in a remarkable degree the fertility and exuberance of invention among French architects, and the degree of trouble they are willing to take, and the Government are willing to pay for, in the design of temporary buildings, no doubt contains a great deal of detail which to English eyes will appear over-florid. We must not, however, wish that the tastes of all nations in these matters should be alike; and it must at all events be recognised that some of the most florid of the designs show a remarkable degree of special character and expression. The Electricity building, for instance, seems to have something of the flashing character of electricity about its detail; the Navigation and Commerce design, with its lighthouse-like turret and the horse-shoe arches in the ground story distantly suggesting the cross section of a ship, has the same specialised character; and the building for the Municipality of Paris suggests an architectural relationship with the Hôtel-de-Ville. All this is not accidental; it is a mode of architectural thought. The side elevation of the Pont Alexandre III. is very graceful in its general lines, in the sculpture in the centre of the span, and above all in the treatment of the portal of access to it; though the lamp standards of the bridge, as the design of an eminent sculptor, are somewhat disappointing, and deficient in special character. Perhaps the most pleasing of all the buildings is the "Postes et Télégraphes" pavilion, both the elevations of which, alike in general character but pleasingly varied in detail, are admirable.

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Clerks of Works.

THE case of Gaven *v.* The Corporation of Gloucester, which was tried last week at Gloucester Assizes, is one which has some importance for clerks of works and building-owners. The plaintiff was discharged from his appointment, for which he was receiving three guineas a week in pay. It was not alleged that he was inefficient or negligent, but the Corporation preferred to be without his services. They gave him 15*l.* as a gratuity. The plaintiff, however, alleged that he was really engaged for the whole period during which the work would be in hand, and therefore claimed 183*l.* On the other hand, the Corporation contended that the plaintiff was paid weekly wages and was only entitled to one week's wages. The Judge seemed to consider each contention to be unsound, and gave a direction to the jury that they should give the plaintiff a reasonable sum, having regard to all the circumstances of the case. They awarded the plaintiff 81*l.* It seems clear that a clerk of the works is not engaged for the entire period during which the work is in progress. An employer may come to the conclusion, for instance, that a cheaper clerk of the works is sufficient, and may therefore desire to make a change. Clearly he would have the right to do this. On the other hand, the weekly payment does not seem necessarily to make a clerk of the works a mere weekly servant. He is entitled, it would seem, to a reasonable notice—in other words, he should have time to look out for another situation.

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A Hint from Venice.

IN last week's issue of the *Spectator* the Vicar of Cirencester (the Rev. J. S. Sinclair) makes a fine suggestion in regard to a means of keeping in memory the devotion of the colonies to us in the present war—a suggestion which has its artistic as well as its patriotic interest. He refers to the four great flag-poles and their bases in front of St. Mark's at Venice, which formerly bore the ensigns of the great Venetian dependencies, and asks, "Why should we not have the same thing in front of St. Paul's? . . . Four great masts, to represent Canada, Australia, New Zealand, and South Africa, set in splendid and emblematic bases, and properly decorated, would be artistically an addition to a now historic site." We cordially welcome the spirit, at all events, of the suggestion. The fact of its being made is one of the many instances which show how the struggle now going on is tending to draw together the English-speaking race, and to suggest higher ideals of life than those of mere commercial success. The masts and their decoration should of course be designed in a manner to harmonise architecturally with the cathedral. Or perhaps the same idea might be more suitably carried out in Palace Yard, with the clock-tower as a background.

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No. 17, Fleet-street.

THE date of the erection of this house—the so-called "Palace of Henry VIII. and Cardinal Wolsey"—seems to be now determined, beyond dispute, by an interesting communication to *Notes and Queries* of last Saturday. The writer of the paragraph we cite quotes an extract from the records of the Inner Temple relating to a 'parliament" held there on June 10, 1610. The Benchers consent to the closing of the Inner Temple gate in Fleet-street during the rebuilding of the gateway and of the adjoining house, called the "Prince's Arms," standing over the gate and the lane into Inner Temple, by one John Bennett, who in consideration of a lease granted to him covenants to raise the gate and its walls to 11 ft. high and 9 ft. broad. The extract gives details of the new building; it is to be 19 ft. deep from the street, and the "jettie," or overhang, of the front elevation will project 2 ft. 4 in. Towards the cost, 26,050*l.*, of acquiring the freehold, which belongs, we are informed, to Clare College, Cambridge, and of some necessary repairs, the Corporation of London have already agreed to contribute 2,500*l.*, provided that the structure be set back to the general line of the improvement scheme now in progress for widening the south side of Fleet-street. Of the house and its history we gave an account in our issue of December 31, 1898, when it was proposed to rebuild the premises after the designs of Messrs. E. l'Anson & Son.

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Dundas Castle, North Britain.

WE read that this property has been recently purchased for 135,000*l.* by a resident of Paisley. The property, which extends over 2,000 acres lying near Dalmeny and Queensferry, comprises a mansion, built in 1818, of Humbie stone, in the Tudor style, after the plans and designs of William Burn, of Edinburgh. Dundas Castle, standing on the elevated end of the Rock Walk, was built in the former half of the fifteenth century by the then Chief of Dundas under a warrant granted by Robert, Duke of Albany. Having latterly been used for purposes of a distillery the Castle has suffered some changes in respect of its original features. On June 10 last we printed a brief account of the structure, the Castle gardens, and the richly-ornamented Renaissance fountain, with sun-dial, set up by Sir Walter Dundas in 1623.

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The Founders Company Competition.

THIS company announce a competitive exhibition at Ironmongers' Hall, to be held on May 9 and 10, for various works in founding. First comes (A) one for "The best casting," which is purely practical. Next (B), "The best group figure or head." Does this mean designed and modelled by the competitor? For this is not quite clear. Nor is it clear what is the precise meaning of the next (C), "For the best panel in ornamental figure." Is this to be original design or not; and in either case what is the meaning of the vaguely-used word "figure"? The next prize is (D) for the "best bell (not to exceed 9 in. in diameter)"; this also does not quite explain itself; is the prize for the cleanest casting, or the best shape, or the best tone? The final subject (E) is clearly defined: "The best design, which may be a drawing, model or pattern, for any kind of cast metal work." But the articles B, C, D certainly need some clearer definition as to what is really wanted, and for what qualities the prize is to be awarded.

*d*

showing themselves every year to be capable bodies—conservative perhaps, but yet with a good deal of the spirit of improvement in them. The County Council should either proceed on its own account or be set in motion either by the Parish or District Council, or by two or more individuals. In other words, the initiative should be an open one. As to what may be termed the mode of inquiry, that is a machinery which would be easily arranged. And once the power is entrusted to the County Councils, we have little doubt that the method of working would present no difficulty. Moreover, any such powers would, probably, also have an indirect effect. There are landed proprietors who would find in the mere existence of the power an incentive to build on their own account. Without being unduly severe on landed proprietors, there cannot be a doubt that much increased cottage accommodation could be provided out of income, if the possessors of such income would be willing to forego some expensive luxuries. A couple of cottages can be built for 300*l*. There are many land-owners who keep race-horses, large establishments, a stud of hunters, a town house, and so on, who—with a very slight drawing in of expenditure—would be able to erect cottages in sufficient number.

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THE idea which is popularly held in regard to patents is that those who obtain them are anxious, above all other persons, to make as much use of them as possible. But it does not always follow that patentees desire to use their patents, any more than that the purchaser of some particular thing, such as an iron mine, intends to work it. It is common for persons to buy property to prevent others from competing with them. But it is public policy to grant patents for two purposes—the advantage of the patentee and of the public. On the one hand, the patentee is given a specified time within which he alone can reap the fruits of his ingenuity, labour, or thought; on the other hand, his invention, after the lapse of this particular period, becomes public property. During the continuance of that period it is assumed that the public as well as the patentee is to have the advantage of the patent. It was on these principles that the Legislature went when passing the Patents Act, 1883. In the statute under the head of "Compulsory Licences" there is to be found the twenty-second section, which runs as follows: "If on the petition of any person interested it is proved to the Board of Trade that by reason of the default of a patentee to grant licences on reasonable terms (*a*) the patent is not being worked in the United Kingdom; (*b*) the reasonable requirements of the public with respect to the invention cannot be supplied; or (*c*) any person is prevented from working or using to the best advantage an invention of which he is possessed, the Board may order the patentee to grant licences" on such terms as it may consider just. If this section is carefully read it is obvious that it gives to the Board of Trade very large powers to oblige patentees to make the best use of their inventions in the public interest. But, as in the case of many other enactments apparently useful, it has the disadvantage of not being easily worked; for a moment's reflection will show that it would be easy for a patentee to bring forward all kinds of specious reasons against the employment by the Board of Trade of its compulsory powers. But once set the power in motion, and it is of a formidable kind—much more so than is generally known; though for that matter it is doubtful if the far-reaching importance of this section is at all realised.

Yet from time to time the section has been set in motion. We will give an instance of its successful employment: "The patented invention related to an improved attachment to newspaper printing machines . . . . and the use of the attachment was monopolised by a particular evening paper. The exclusive command of the invention was, of course, of great commercial importance to the conductors of the privileged paper. This, however, it was contended, placed an undue restriction upon the public enjoyment of the benefit of the invention, since the readers of other newspapers could get no advantage from the added facilities in the dissemination of news. The referee adopted this view, and an order was made by the Board of Trade for the licence asked for." It would not be easy to find a better instance of the action of the section than this. Apply this example to inventions in regard to building materials, and it becomes obvious that its development might lead to some startling results. That in each case of a demand for a licence on the ground that the reasonable requirements of the public cannot be supplied, there must arise, more or less, a question of fact, is pretty clear. On the other hand, the power is so wide and important that it is a matter of regret that it is not exercised by a Judge of the High Court, so that some series of precedents, based on some generally-accepted principles, might be laid down; because it seems clear from the newspaper case to which allusion has been made that it would not be difficult for commercial rivals to make use of this particular branch of the Patents Act for their own purposes under the guise of assisting the public. Suppose, for instance, an invention for some particular kind of lock, and that the patentee had disposed of the right to sell it to one firm of builders only, naming a royalty which was sufficient remuneration. Clearly some very difficult questions would arise if this firm of builders decided not to supply the locks except on doors which they put up. We give this assumed case, because the more the section is considered, especially in the light of the case referred to, the more difficult it seems to find a place where its application stops.

Practically it seems to go as far as this, that a patent, though the inventor is allowed to receive remuneration as against all other persons, must yet, however, be placed within the reach of the public generally at a reasonable price. The working of the Act under this head has as yet been insufficient to justify us in laying down any rules in regard to it, based as these must be on a few semi-judicial decisions or orders of the Board of Trade. Its mere existence may perhaps be sufficient to give the public a reasonable enjoyment of patented inventions. Be that as it may, the existence of the section—in its far-reaching application—cannot be too well known both to patentees and to the public

* "Compulsory Licences under the Patent Acts." By J. W. Gordon, Barrister. London: Stevens & Sons, Limited. 1899.

## NOTES.

The Holborn to Strand Improvements.

WE print on another page in full the proposals of the London County Council for the architectural control of the buildings to be erected in the new street from Holborn to the Strand, and those in the crescent and the straight alignment north of the Strand. It is a matter for congratulation that the County Council should have recognised the importance of endeavouring to secure the best architectural treatment of such important streets; but there are two points which certainly require reconsideration in their proposals. One is the suggestion that the style of the buildings should be "Palladian freely treated." In the first place, it is difficult to define what "Palladian" means; it may mean half a dozen things to half a dozen different people. In the second place, is it advisable to tie down the architects, who are to compete, to any nominal style at all? We think decidedly not, and we should expect to find that the Institute of Architects, who have been consulted by the County Council, would be of the same opinion. The other point is as to the treatment of the proposed crescent. A crescent is a special feature—one may say an architectural feature, in itself; and we are most strongly of opinion that a crescent, to get its full effect, should be treated as one homogeneous design, not as a collection of houses of possibly varying heights and varying features. The case of a crescent is quite different from that of an ordinary street. It is a form adopted for ornamental reasons, and therefore demands a special treatment; half its effect depends on the unbroken sweep of the skyline, and this would be entirely destroyed unless a homogeneous design were adopted. It would be quite easy to include in such a design houses of two or more different widths of frontage, so as to meet to some extent the varying requirements of tenants or purchasers.

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Drawings of the Paris Exhibition.

THE collection of drawings exhibited at the Institute in illustration of M. Lucas's paper on the buildings of the Paris Exhibition, while it exhibits in a remarkable degree the fertility and exuberance of invention among French architects, and the degree of trouble they are willing to take, and the Government are willing to pay for, in the design of temporary buildings, no doubt contains a great deal of detail which to English eyes will appear over-florid. We must not, however, wish that the tastes of all nations in these matters should be alike; and it must at all events be recognised that some of the most florid of the designs show a remarkable degree of special character and expression. The Electricity building, for instance, seems to have something of the flashing character of electricity about its detail; the Navigation and Commerce design, with its lighthouse-like turret and the horse-shoe arches in the ground story distantly suggesting the cross section of a ship, has the same specialised character; and the building for the Municipality of Paris suggests an architectural relationship with the Hôtel-de-Ville. All this is not accidental; it is a mode of architectural thought. The side elevation of the Pont Alexandre III. is very graceful in its general lines, in the sculpture in the centre of the span, and above all in the treatment of the portal of access to it; though the lamp standards of the bridge, as the design of an eminent sculptor, are somewhat disappointing, and deficient in special character. Perhaps the most pleasing of all the buildings is the "Postes et Télégraphes" pavilion, both the elevations of which, alike in general character but pleasingly varied in detail, are admirable.

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Clerks of Works.

THE case of Gaven *v.* The Corporation of Gloucester, which was tried last week at Gloucester Assizes, is one which has some importance for clerks of works and building-owners. The plaintiff was discharged from his appointment, for which he was receiving three guineas a week in pay. It was not alleged that he was inefficient or negligent, but the Corporation preferred to be without his services. They gave him 15*l.* as a gratuity. The plaintiff, however, alleged that he was really engaged for the whole period during which the work would be in hand, and therefore claimed 183*l.* On the other hand, the Corporation contended that the plaintiff was paid weekly wages and was only entitled to one week's wages. The Judge seemed to consider each contention to be unsound, and gave a direction to the jury that they should give the plaintiff a reasonable sum, having regard to all the circumstances of the case. They awarded the plaintiff 81*l.* It seems clear that a clerk of the works is not engaged for the entire period during which the work is in progress. An employer may come to the conclusion, for instance, that a cheaper clerk of the works is sufficient, and may therefore desire to make a change. Clearly he would have the right to do this. On the other hand, the weekly payment does not seem necessarily to make a clerk of the works a mere weekly servant. He is entitled, it would seem, to a reasonable notice—in other words, he should have time to look out for another situation.

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A Hint from Venice.

IN last week's issue of the *Spectator* the Vicar of Cirencester (the Rev. J. S. Sinclair) makes a fine suggestion in regard to a means of keeping in memory the devotion of the colonies to us in the present war—a suggestion which has its artistic as well as its patriotic interest. He refers to the four great flag-poles and their bases in front of St. Mark's at Venice, which formerly bore the ensigns of the great Venetian dependencies, and asks, "Why should we not have the same thing in front of St. Paul's? . . . Four great masts, to represent Canada, Australia, New Zealand, and South Africa, set in splendid and emblematic bases, and properly decorated, would be artistically an addition to a now historic site." We cordially welcome the spirit, at all events, of the suggestion. The fact of its being made is one of the many instances which show how the struggle now going on is tending to draw together the English-speaking race, and to suggest higher ideals of life than those of mere commercial success. The masts and their decoration should of course be designed in a manner to harmonise architecturally with the cathedral. Or perhaps the same idea might be more suitably carried out in Palace Yard, with the clock-tower as a background.

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No. 17, Fleet-street.

THE date of the erection of this house—the so-called "Palace of Henry VIII. and Cardinal Wolsey"—seems to be now determined, beyond dispute, by an interesting communication to *Notes and Queries* of last Saturday. The writer of the paragraph we cite quotes an extract from the records of the Inner Temple relating to a 'parliament" held there on June 10, 1610. The Benchers consent to the closing of the Inner Temple gate in Fleet-street during the rebuilding of the gateway and of the adjoining house, called the "Prince's Arms," standing over the gate and the lane into Inner Temple, by one John Bennett, who in consideration of a lease granted to him covenants to raise the gate and its walls to 11 ft. high and 9 ft. broad. The extract gives details of the new building; it is to be 19 ft. deep from the street, and the "jettie," or overhang, of the front elevation will project 2 ft. 4 in. Towards the cost, 26,050*l.*, of acquiring the freehold, which belongs, we are informed, to Clare College, Cambridge, and of some necessary repairs, the Corporation of London have already agreed to contribute 2,500*l.*, provided that the structure be set back to the general line of the improvement scheme now in progress for widening the south side of Fleet-street. Of the house and its history we gave an account in our issue of December 31, 1898, when it was proposed to rebuild the premises after the designs of Messrs. E. l'Anson & Son.

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Dundas Castle, North Britain.

WE read that this property has been recently purchased for 135,000*l.* by a resident of Paisley. The property, which extends over 2,000 acres lying near Dalmeny and Queensferry, comprises a mansion, built in 1818, of Humbie stone, in the Tudor style, after the plans and designs of William Burn, of Edinburgh. Dundas Castle, standing on the elevated end of the Rock Walk, was built in the former half of the fifteenth century by the then Chief of Dundas under a warrant granted by Robert, Duke of Albany. Having latterly been used for purposes of a distillery the Castle has suffered some changes in respect of its original features. On June 10 last we printed a brief account of the structure, the Castle gardens, and the richly-ornamented Renaissance fountain, with sun-dial, set up by Sir Walter Dundas in 1623.

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The Founders Company Competition.

THIS company announce a competitive exhibition at Ironmongers' Hall, to be held on May 9 and 10, for various works in founding. First comes (A) one for "The best casting," which is purely practical. Next (B), "The best group figure or head." Does this mean designed and modelled by the competitor? For this is not quite clear. Nor is it clear what is the precise meaning of the next (C), "For the best panel in ornamental figure." Is this to be original design or not; and in either case what is the meaning of the vaguely-used word "figure"? The next prize is (D) for the "best bell (not to exceed 9 in. in diameter)"; this also does not quite explain itself; is the prize for the cleanest casting, or the best shape, or the best tone? The final subject (E) is clearly defined: "The best design, which may be a drawing, model or pattern, for any kind of cast metal work." But the articles B, C, D certainly need some clearer definition as to what is really wanted, and for what qualities the prize is to be awarded.

The Water-Colour Society Art-Club.

THE exhibition of the Royal Water-Colour Society Art-Club, which was open from Wednesday to Saturday last week at the Society's Gallery, was a remarkable testimony to the amount of good work which is now done by amateur artists in water-colour—for the members of the Club are nearly all amateurs. There was some rather crude work to be seen, no doubt, but in the main the exhibition might compare favourably, if not with those of the Water-Colour Society itself, at all events with some other exhibitions of professional work. Mr. G. F. Glennie's "Flotsam and Jetsam on the coast of Tintagel," which occupied the centre place at the top of the room, is a work of which any artist might be proud, and one of great originality in colour and in the treatment of the sea. "Shipping Slates at Tintagel" is another fine work by the same hand; and Miss Maud Glennie's "Merlin's Cave, Tintagel" is an admirable drawing in a fine broad style. Mr. Ernest George and Mr. Phené Spiers can hardly perhaps be classed as amateurs, where architectural subjects are concerned; they contributed some excellent drawings of this class of work. Among other things worth special mention were Mrs. Hensley's still-life study, "Brambles"; Mr. Hallam Murray's sketches at Florence, especially that of the Ponte Vecchio; Mrs. Jardine's "Wood in Glen Urquhart"; Miss Florence Boothby's two Highland landscapes; Miss Rosa Wallis's charming little sketch of San Gimignano, with its mediæval towers standing up like chimneys in the distance; Mr. Baldrey's "Sand Dunes, Camiers"; various landscape sketches by Mrs. Arthur Moro, whose style is a little too misty and washed-out, but who has at all events made a style of her own; and Miss Eleanor Brace's "Sketch near Lewes," quite a model of what a water-colour sketch (as distinguished from a finished drawing) should be. We were interested also to notice that one lady member, Miss E. G. Hill, has taken to illustrating characters from Jane Austen—a writer most unaccountably neglected by artists, for she is full of suggestion for illustrators; her two heads of Miss Crawford ("Mansfield Park") and John Thorpe ("Northanger Abbey") are not only admirably executed but full of character; the latter especially completely realises Jane Austen's portrait of the "horsey" gentleman of fashion. The exhibition included a small collection of works by two deceased members of the Water-Colour Society, Havell and F. Tayler. The works of Havell, who died as long ago as 1857, are interesting as examples of a school of water-colour art very different from that of the present day, and his little miniature landscapes for the illustrated pocket diaries then in fashion are charming examples of delicate and conscientious work on a small scale. F. Tayler, who was one of the presidents of the Society, exhibited as late as 1889, and his drawings of equestrian and sporting subjects will be fresh in the memory of many exhibition-goers. His large and elaborate picture, "The Festival of the Popinjay," an illustration of the scene in "Old Mortality," formed the central example of his work; among the others perhaps nothing was so admirable as the half-finished study of "A Moss-trooper," a perfect piece of character both in man and horse.

## THE ROYAL INSTITUTE OF BRITISH ARCHITECTS:

### PALACES OF THE PARIS EXHIBITION.

AN ordinary general meeting of the Royal Institute of British Architects was held on Monday evening, Mr. W. Emerson, President, being in the chair, when a paper on "The Palaces of the Paris Exhibition, 1900," was read by M. Chas. Lucas. There was a large attendance.

The minutes of the last meeting having been taken as read,

The Chairman said it was his pleasurable duty to introduce M. Lucas, who had been hon. corresponding member of the Institute since 1881, and who was one of their most energetic members holding that position. The drawings hung round the wall were only part of what M. Lucas had obtained in illustration of his paper. There were altogether 130 or 140 drawings, and the remainder were hung in the library, where they would be open for inspection for a few days.

M. Chas. Lucas then followed with his paper, which he read in French, and of which the following is an abstract:—

The Exhibition occupies an area of about 112 hectares (1,120,000 square mètres) apportioned thus:—Champs de Mars, 50; Trocadéro, 16; Esplanade des Invalides, 12; Champs Elysées, 15; Quays on the left bank of the Seine, 9·50; Quays on the right bank, 9·50. In addition, in the Bois de Vincennes, 110 hectares (1,100,000 square mètres) have been provisionally taken for special exhibitions, various sports, houses for the working classes, &c. The superficial area covered in will not be less than 450,000 square mètres—the French section occupying 250,000, the foreign section 170,000, and the Bois de Vincennes 32,000. The private buildings of the foreign sections along the left bank of the Seine cover a superficial area of about 50,000 square mètres. Besides the buildings above indicated, there are 100 French pavilions, numerous restaurants, kiosques, cafés, and drinking bars, as well as seventy-five pavilions or foreign edifices beyond the official pavilions of the nations represented at the Exhibition, numbering thirty-six.

It is calculated that the total weight of iron and steel employed in the French official palaces alone amounts to 50,000 tons; and for the motive power and the electric lighting there has been provided a total force of 20,000 h.-p., which, in case of need, can be brought up to 40,000. The power of the cranes used is 425 tons. Some 5,000 workmen are daily employed on the works.

The selection of architects for the principal palaces was determined by public competitions. The twenty-three workyards, under the general supervision of the Architectural Department, have at their head twenty-three architects, all premiated in the two competitions for the erection of the two permanent palaces in the Champs Elysées. These architects, among them seven former students of the Academy of France at Rome, are surrounded by colleagues chosen by themselves among old fellow-workers in offices, the École des Beaux-Arts, or the *loges*—that is to say, among old pupils of the same masters, who have shared in the same artistic struggles. Thus the buildings are a resultant, if not of the tendencies of the French school of architecture, at least of the methods of study of its students. Of all the buildings, two only will remain permanently—viz., the two palaces in the Champs Elysées, which are intended for fine art exhibitions. The others will be demolished immediately after the close of the Exhibition in November.

Before reviewing the buildings, M. Lucas called attention to the numerous collection of drawings, photographs, &c., ranged on the walls of the meeting-room, which had been brought together to illustrate his paper. These comprised large plans showing the situation of the various buildings, and plans, sections, elevations, perspective views, and photographs of most of the official buildings. The collection, partly composed of official documents not publicly obtainable, and forming the most complete set possible to be procured, had been got together through the kind assiduity of M. Bouvard, who had desired M. Lucas to present the collection to the Institute in his name. They are to be supplemented by the whole of the studies for the great permanent palace on the Champs Elysées, which M. Albert Thomas, the architect, himself proposes to present.

M. Lucas then went on to describe the following buildings more or less in detail, taking them in the order in which the various illustrations representing them were catalogued:—

*The Monumental Gateway on the Place de la Concorde* (M. Binet, architect).

*The Small Palace on the Champs Elysées* (M. W. Girault, architect).—This building, slightly modified since first designed, retains all the charm which captivated the jury and the public at the time of the competition, and won for its author the appointment of chief architect of the two palaces of the Champs-Elysées. In course of its erection, M. Girault and the architects of the Great Palace agreed upon certain modifications for the sake of harmony between the Great and Small Palaces, which are intended to make a monumental whole, ornamenting the new Avenue des Palais, and forming, together with the Pont Alexandre III., the architectural legacy of the Exhibition of 1900.

*The Great Palace*—in three portions: (1) the anterior portion, on the Avenue des Palais; M. Deglane architect. (2) The central, M. Louvet architect. (3) The posterior, M. Albert Thomas architect. This is the most important of the permanent structures. Each portion, especially the front and rear, combines in itself a complete edifice. The three architects, each making a sacrifice of some of his artistic ideas, have contrived a completely harmonious whole, in which stand out portions of great beauty and personal feeling. The central section has two fronts, of which the northern, fronting the Avenue des Champs Elysées, is raised upon a podium. One of the most remarkable motives, not only of the Great Palace, but of the whole of the exhibition buildings, is the grand staircase—a real staircase of honour for the most stately ceremonials—leading from the ground floor to the concert hall and galleries on the first story. The conscientious study in metal, and particularly of the iron gutter, is strikingly noteworthy from the point of view both of construction and decoration, combining as it does boldness and elegance. The rear section of the Great Palace forms a complete and fascinating whole, with its great central hall, crowned by an elliptic dome, with its straight staircase, its galleries, and its saloons. Behind the Ionic order which decorates the main front runs a high enamelled frieze, the work of the national manufactory of Sèvres, whose varied tones will be lit up by the setting sun.

*The Pont Alexandre III.* (MM. Cassien-Bernard and G. Cousin, architects).—In the course of his remarks on this bridge, M. Lucas said that it would always remain an irrefutable witness of the necessity of the alliance between architects and engineers in works of public utility. Referring to the rich Ionic order and the sculpture which decorated the two palaces and bridge, the only artistic monuments which would survive the Exhibition, the author said that they recalled the luxury displayed by Louis XIV. in his Royal residences; occurring, as they did, under a Republican Government, in such an eminently popular manifestation as a Universal Exhibition, they were significant to show that art was an essential need of France whatever the institutions in force at the time.

Coming to the temporary buildings, the author went over the various plans and working drawings, and briefly commented upon each structure.

*The Pavilion of the Town of Paris* (M. Gravigny, architect).

*The Palace of Horticulture* (M. C. A. Gautier, architect).

*The Palace of Social Economics and Congresses* (M. Mewès, architect).—In this palace rooms are specially arranged for the international congresses, two of which, the Congress of Architects (July 29-August 4) and the Congress of Public Art (August 6-11), the author said, seemed to invite the presence of English architects.

*The Théâtre des Bonshommes Guillaume and the Aquarium* (MM. Henri and Albert Guillaume).

*Old Paris* (restoration by M. Robida).—This is a complete mediæval town, covering a spacious area, built on piles, and containing gates and commune house, turrets, *bretèches*, and famous houses, old markets and theatre, grand hall of the palace, and chapels, well, pillory, stalls, shops, taverns, &c.

*Pavilion of the Egyptian Section* (MM. Boulad and Dourgnon).—This is composed of three blocks (1) a temple of Ancient Egypt; (2) an

Arabian bazaar; (3) a theatre with façade of Ancient Egyptian style.

*Palace of the Algerian Section* (M. Albert Ballu, architect).—This reproduces the minaret of the mosque of the Sultan Bashaw at Oran, the cupola of the mosque of La Pêcherie at Algiers, the Moorish court of the old museum of Algiers, &c.

*Palaces of Navigation, Commerce, Woods and Forests* (MM. Tronchet and Rey, architects).

*Palace of Education, Teaching, Instruments, and General Processes of Letters, Science, and Arts* (M. Sortais, architect).

*Palace of Civil Engineering and Means of Transport* (M. Jacques Hermant, architect).

*The Château d'Eau and Palace of Materials, and General Processes of Mechanical and Chemical Industries, &c.* (M. Paulin, architect).—This, crowned by the crest of the Palace of Electricity, promises to be, in combination with the latter, one of the great attractions of the Exhibition. In the evening strings of electric lights will illuminate the main architectural lines and the cartouche, and the various water-effects, cascades, and jets will be rendered luminous and coloured with every hue.

*Palace of Electricity* (M. Eug. Henard, architect).—In this palace, surrounded on all sides and partly masked by the Château d'Eau, the architect has concentrated his whole decorative effort in the upper part of the central hall, which is in the form of a trilobate vault, containing the great niche of the Château d'Eau. The building is surmounted with a broad open-work crest; during the day it will give the impression of metal lacework standing out against the sky, and during the night the appearance of lacework of flame.

Other palaces described were the Salle des Fêtes (M. Raulin, architect), adapted from the Machinery Gallery of the Exhibition of 1889, and to remain permanently as a hall for the award of prizes; Palace of Woven Fabrics (M. Blavette, architect); Palace of Mines and Metallurgy (M. Varcollier, architect): Palace of Belgium (MM. Acker and Maukels); Palaces of National Manufactures (MM. Toudoire and Pradelle); Palace of Decoration and Furniture (M. Esquié, architect); Palace of Various Industries (MM. Larche and Nachon, architects); Palace of Ceramics, Crystals, and Glasswork (M. Tropey-Bailly, architect).

In his closing observations, M. Lucas said that throughout all the conscientious work, in the heart of which is paramount the influence of the school in which the architects and their collaborators had been trained, there is observable, especially in the richness of the decoration and the exuberance of the sculpture, a certain exoticism, a reflection, as it were, of architectural styles come ready-moulded from the furthest East, giving rise to thoughts of Colonial France and its art.

Touching the remuneration received by the architects of the Exhibition, M. Lucas quoted from a report of the Minister of Commerce to the President of the Republic. The remuneration was fixed and comparatively small. The chiefs of offices—men of tried skill and assured reputations—would easily find higher remuneration in private work. The more meritorious is the zeal with which they devoted themselves to the service of the State.

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Mr. F. C. Penrose, in moving a vote of thanks to M. Lucas, described his lecture as a really admirable one, and said its value was enhanced by the splendid views shown. M. Lucas was, in his opinion, a model foreign correspondent, but apart from that, he (Mr. Penrose) had to thank him for much kindness, to him personally, when in Paris. Beyond that, he would say no more on that occasion.

Mr. H. H. Statham, who seconded, said he had pleasure in doing so on personal grounds, M. Lucas being an old friend of his; and he was, moreover, able to add his tribute to his services not only as the foreign correspondent to the Institute, but for the assistance M. Lucas had rendered him personally by his communications from Paris. His lecture had been wonderfully elaborate, and the trouble he had gone to in collecting the illustrations deserved their thanks too. Although the tastes of different countries varied, and although what might be admired by the French might not always be admired by the English, yet they could not but feel that there was no question as to the extraordinary spectacle displayed by the enthusiasm for art by the French in the designing of the Exhibition buildings. Although the majority of the buildings were only put up for use for a year, the first architects, artists, and sculptors were employed on them. There was, in fact, the greatest effort to make these temporary building not only shelters for the works and manufactures they were intended to contain, but structures of artistic beauty. This spectacle, as he had said, was remarkable, and the lesson it should teach—not, perhaps, ourselves, so much as the English public and the English Government—was that it was, after all, well worth while going for advice and assistance to the best architects and artists. Those who had time would, no doubt, go to Paris, and so far as those present that night were concerned, their observations would be much assisted by the lecture and the illustrations of M. Lucas.

Mr. W. J. Locke (the Secretary) mentioned that the illustrations, numbering altogether 137, had been presented to the Institute, to be held in its permanent possession.

The vote of thanks having been heartily agreed to,

The Chairman conveyed to M. Lucas, in French, the terms of the vote, and proceeded to remark upon the enormous amount of trouble to which M. Lucas had gone to get descriptions of the complicated buildings of the Exhibition. The first point that struck him was that in which the lecturer, in speaking of the tendency of the French school of architects, claimed that the buildings clearly showed the intense interest of the French architects in their work. Mr. Statham had also referred to the enormous amount of trouble that was bestowed upon buildings which were, after all, ephemeral. Yet on looking over the drawings he could not believe that the French had put their heads together in the same way as the Americans did in connexion with the Chicago Exhibition. The Chicago buildings were one magnificent whole—a homogeneous collection, designed on lines which formed one of the most magnificent spectacles that one could ever find in the world. In looking at the illustrations of the Paris buildings he could not, however, but feel that there was more art than architecture in them. The Americans, too, put aside their individual bias and joined together in producing a design which was collectively suitable. This was a great point for them to consider in London in connexion with great Metropolitan improvement schemes. They could be carried out to advantage if architects put their heads together and produced one grand scheme, instead of designing, according to their individual tastes, buildings which could certainly not be regarded, from an architectural standpoint, as appropriate to their neighbours, but rather disjointed and wanting in unison. He noticed that the sculptor had not been avoided in connexion with the bridge of Alexander III., and that the architect and engineer had worked together. He quite endorsed M. Lucas' view that architecture and science and art should go together, and it was only necessary to point out that the architect who designed the great electrical building was not only a scientist but an artist.

The Chairman afterwards submitted a resolution thanking M. J. Bouvard, City Surveyor of Paris and director of the architectural works and the buildings, and other architects who had joined in presenting the drawings to the Institute.

This was also adopted.

The Chairman also announced that a special general meeting will be held on March 5, for the election of the Royal Gold Medallist, 1900. The meeting will be followed by a business meeting, when an election of members will take place, and the chairman will bring forforward a series of recommendations of the Council with respect to the composition and election of the Council under By-laws 25, 29, and 30. The proposals will be to the following effect:—That in By-law 25, the words "thirty-six" in the first line be altered to "thirty-eight," and that the word "two" in the second line of Section (*a*) be altered to "four"; that in By-law 29 the second sentence be altered so as to read, "Any Associate shall be eligible to serve as an Associate-member of Council"; that in By-law 38 the word "three" in the seventh line be altered to "six," and further that the words "but the names of members of the existing Council shall be distinguished by an asterisk," be omitted from the same by-law.

*Congress of Architects.*

The Chairman also announced that arrangements were being made for a congress of architects to be held in London in June. The congress would be supplemented by a reception and a conversazione, followed by the annual dinner. They hoped to secure the attendance not only of London architects, but of those from the country not on the roll of the Institute.

The meeting then terminated.

## THE ARCHITECTURAL ASSOCIATION DISCUSSION SECTION.

THE eighth meeting of the Discussion Section of the Architectural Association was held on Friday evening, the 16th inst., at 56, Great Marlborough-street, W., Mr. W. B. Hopkins in the chair, when Mr. William A. Forsyth read a paper dealing with "Some Aspects of Modern Architecture."

Treating this subject from a wide point of view, the author stated that to an ordinary mind, the "Revivals" having arisen and been dropped, the state of British architecture, compared with that of past decades, seemed one of almost hopeless confusion, and hence there was evidenced much bewilderment in present-day design. Cheap money and greater facilities had led to an enormous amount of building, all put up at the least possible cost, showy to attract the general public, and with sufficient construction to pass the district surveyor, a phase of the commercial aspect which was borne home to every one—work scarcely to be called "architecture," erected with only one aim, viz., to return as much possible for invested capital.

The author poured scorn upon the commercial sculpture of the day, and the handing of a well-planned and convenient building over to a decorating firm to beautify, holding that the architect by his knowledge of the fitness, scale, and detail should properly supervise all such decorative work. The employment of the best artists and sculptors, working in collaboration with the architect, was an incident of great encouragement in these modern times, as without doubt beautiful and refined buildings had a subtle though unconscious influence for good on the minds of the beholders.

Dealing with the social aspect (meaning thereby the influence of modern thought on architecture), Mr. Forsyth noted how hospitals, Board schools, free libraries, fire-brigade stations, all in their different ways pointed to the spread of interest in dealing with our sick and dying, the education question (both for children and adults), and the safety of the general public in our great metropolis. Probably at no time had the art of planning reached such a pitch of excellence as it had to-day, and never were difficult problems so well met and overcome, which certainly was *something* to say, to be followed, one would hope, by æsthetic development later. One was bound to take notice of the enormous amount of knowledge and real hard facts which it was absolutely essential to have at one's fingers' end before one could hope to cope successfully with any modern building.

Coming to the question of present-day domestic work, he claimed that the middle-sized houses round London and throughout the South of England showed perhaps the greatest progress we had made in any branch, being entirely adequate in planning, essentially modern in their treatment of elevations, &c., and thoroughly English and honest in appearance. Mr. Forsyth, in conclusion, expressed the hope that the "A. A.," as it had done much in the past, would still do more in the struggle for reform, the keynote in whose future training must be *thought*—thought which would eventually find expression in our buildings.

After a discussion, in which Messrs. Cantley, Maule, Herbert, Garbutt, Blunt, Strange, Weymouth, and the Chairman took part, Mr. Beresford Pite, as Special Visitor, summed up with an optimistic view of the situation; claiming that there had been an immense improvement in architecture during the last ten or fifteen years. Architects, as a body, had the moral ideal (that of hard conscientious work), but there was a lack of the artistic ideal, only to be attained at the expenditure of much paper and indiarubber; and urged the study of such artistic ideals as might be seen in any fine old Gothic cathedral, or in the work of such men as Michelangelo, Wren, and Inigo Jones (the latter especially, with his wonderful grasp of mouldings), or Sir William Chambers, in his clear perception of the value of proportion, as shown in Somerset House. Mr. Bodley's

work also seemed to have this feeling, so difficult of precise definition. Art was the impress of mind on material, which they should aim at realising, without grumbling at the times in which they were called on to live.

## TRIBUNAL OF APPEAL CASE:

### A DISPUTE OVER THE GENERAL BUILDING LINE.

THE Tribunal of Appeal under the London Building Act, 1894, sat at the Surveyors' Institution on Wednesday to hear an appeal by Mr. Andrew Faulds against the certificate of the Superintending Architect of Metropolitan Buildings, under Sections 22 and 29 of the Act, defining the general line of building on the eastern side of Brixton Hill, between Josephine-avenue and Fairmount-road. Mr. Wright, barrister (instructed by Messrs. Kingsbury & Turner), appeared for the appellant; and Mr. Andrews, from the Solicitors' Department of the London County Council, on behalf of the Superintending Architect.

The appellant is the freeholder of a piece of land abutting on the eastern side of Brixton Hill, lying between Josephine-avenue and Arodene-road, and on which land a one-story building, which has been erected for upwards of twenty years, now exists at a distance of 14 ft. from the footpath in Brixton Hill. The remaining portion of the land has been built over with shops of one story and houses in rear, the shops extending to the footpath of Brixton Hill. The appellant, desiring to build upon the land, served a notice on the District Surveyor of his intention, and forwarded to him a plan showing one-story shops abutting on the footpath and in a line with the existing shops and two-story houses in the rear. An interview with the District Surveyor followed, and he expressed his satisfaction with the plan and the line of frontage, and the appellant thereupon commenced his buildings, which were erected up to the first joists. On receipt of a notice, the Lambeth Vestry Surveyor wrote to the London County Council calling attention to the proposed building as being in advance of the general line of buildings in Brixton Hill, and the appellant, on receipt of a letter from the Superintending Architect, saw the District Surveyor and assured him that he was not building beyond the line of frontage. He was told that he could go on with his work. Nothing more was heard from the London County Council until January, 1900, when Mr. Faulds received notice to attend before the Superintending Architect to define the general line of buildings. A certificate was given that the general line of buildings on the eastern side of Brixton Hill, between Josephine-avenue and Fairmount-road, was a line at a greater distance than 50 ft. from the highway. In defining this building line the Superintending Architect had passed over Arodene-road, which is next to the land in question. The grounds upon which Mr. Faulds appealed, therefore, were—first, that Subsection 2 of Section 22 of the London Building Act, 1894, takes the case out of the architect's jurisdiction; secondly, that he has not decided within one month of the application as provided by Subsection 1 of Section 22; and thirdly, that in any event the building line is wrongly defined.

Before the Tribunal entered upon the merits of the case Mr. Andrews offered a technical objection; a similar objection, he said, to that which he had submitted before. Under Section 24 of the Act it was stipulated that notice of appeal should be given to the owner, the parish authorities, and to "every other person entitled to notice under the regulations of the Tribunal." He pointed out that the owners of the adjoining properties—namely, Nos. 89 to 105, Brixton Hill—had not received the notice required by the regulation.

Mr. Wright said he was instructed that all the persons who appeared before the Superintending Architect had received notice of these proceedings.

The Chairman said that that did not appear to satisfy the requirements of the Act.

Mr. Wright: All I can say is that it would have been more courteous if the Council had given us notice of their intention to raise this objection—a custom that obtained in the higher Courts. Proceeding, he remarked that if the objection was persisted in he could not but feel that it would have a suicidal result to the London County Council.

Mr. Andrews said he was quite prepared to defend the position of the Council when they entered into the merits of the case. All he was content then to submit was that all persons concerned, having the right, should be afforded the opportunity of appealing before the Tribunal. This objection was not intended, as his learned friend seemed to think, to be submitted in a captious spirit. Whether the respondents were right or wrong on the merits of the case, they believed it their duty to see that all parties were represented.

Mr. Wright remarked that if the Tribunal upheld his friend's point he would ask them to follow the analogy of the Quarter Sessions and grant an adjournment with the question of costs reserved.

The Chairman said he had gleaned from the clerk of the Tribunal that the appellant's solicitors were informed of the necessity of serving notices according to the regulations of the Tribunal.

Mr. Kingsbury said he had no recollection of this communication coming to his notice.

The Chairman: And yet you seem to have selected a certain number of persons to whom to give notice.

Mr. Andrews, in the course of further discussion, said the question would be raised as to the operation of the Rush Common Act with regard to this building line.

Mr. Wright said he was prepared to meet this point when it was raised.

The appeal was adjourned *sine die* to enable the persons to serve the proper notices. The learned gentlemen concerned in the case had a short conference and expressed the hope that some amicable settlement would be arrived at.

## APPLICATIONS UNDER THE LONDON BUILDING ACT, 1894.

AT the meeting of the London County Council on Tuesday, the following applications under the London Building Act were considered. Those applications to which consent has been given are granted on certain conditions. Names of applicants are given in brackets. Buildings are new erections unless otherwise stated:—

### *Lines of Frontage.*

*Brixton.*—Residential flats with shops and bay-windows, on the west side of Brixton-road, Brixton, between South Island-place and Chapel-street (Messrs. Boehmer & Gibbs for Mr. W. F. Cave).—Consent.

*Lewisham.*—Four houses with one-story shops on the west side of Rushey-green, Catford, between Willow-walk and No. 146, Rushey-green (Mr. A. L. Guy for Mr. G. Cowen).—Consent.

*Kennington.*—A church on the north side of Fentiman-road, Kennington, at the corner of Meadow-road, with projecting porches and buttresses (Messrs. G. Baines & Son for Mr. H. Corben).—Consent.

*Kensington, South.*—Buildings on the east side of Addison-road, Kensington, at the corner of Oakwood-court (Mr. W. G. Hunt for Messrs. Jones Brothers).—Consent.

*Lewisham.*—A building on the south side of Brownhill-road, Catford, to abut upon Lalehamroad (Mr. J. Bate).—Consent.

*Lewisham.*—Two houses with one-story shops on the south side of Brownhill-road, Catford, at the east and west corners respectively of St. Fillan's-road (Mr. H. Woodham).—Consent.

*Wandsworth.*†—A church on the south side of Franciscan-road, Tooting, with portions thereof in advance of the general line of buildings (Messrs. G. Baines & Son for the Rev. N. H. Patrick).—Consent.

*Islington, South.*—That the consent of the Council of November 21, 1899, to the erection of an addition at the rear of the "Royal Oak" public-house, Offord-road, Islington, to abut upon Thornhill-road (Mr. W. H. Winder for Mr. J. Dickson), be modified by the insertion of the words "except the lantern lights shown on the deposited drawing dated February 10, 1900," after the words "that no part of the proposed addition or any structure or erection connected therewith;" and that Messrs. Corsellis, Mossop, & Berney, who applied on behalf of Mr. J. Dickson for such modification, be informed of this decision.—Agreed.

*Hammersmith.*†—The retention of one-story shops erected upon the forecourts of Nos. 308 to 316 (even numbers only), King-street West, Hammersmith (Mr. A. Lines for Mr. T. Braithwaite).—Refused.

*Wandsworth (detached).*—Houses with shops on the west side of Croxted-road, Dulwich, at the corner of Turney-road (Mr. C. M. Quilter for Mr. S. Admans).—Refused.

### *Projections.*

*Strand.*—That permission be given to the Erasmic Company, Limited, to retain the wood and iron sign in front of No. 117, Oxford-street, St. James's.—Agreed.

*Islington, North.*—That permission be given to Mr. C. E. Clarke on behalf of Mrs. H. M. Smith to retain a projecting iron and glass illuminated sign at the "Birkbeck" public-house, Elthorne-road, Islington, over the entrance in Mulkern-road.—Agreed.

*City of London.*—A four-story oriel-window at the canted angle of Salisbury House, London-wall, and Finsbury-circus, City (Messrs. Davis & Emanuel for Mr. L. Neumann).—Consent.

*Kensington, South.*—A deviation from the plan sanctioned by the late Metropolitan Board of Works on December 15, 1882, for the erection of a portico to No. 88, Cromwell-road, Kensington, by an alteration in the position of the entrance to such portico (Messrs. H. Smith & Son for the National Provincial Bank of England).—Consent.

*Kensington, South.*—A porch in front of a block of residential flats on the east side of Marloes-road, Kensington (Mr. C. F. Kearley).—Consent.

*Walworth.*—Balconies at the first-floor level in front of St. John's Institute, Larcom-street, Walworth (Messrs. Dunn & Watson for the trustees of St. John's Institute).—Consent.

### *Width of Way.*

*Wandsworth.*—An iron fence, on the site of the present wood fence, on the west side of Church-lane, Tooting (Messrs. A. & C. Harston for the Metropolitan Asylums Board).—Consent.

*Kennington.*—Retention, in front of a new workshop on the north side of Langley-lane, South Lambeth-road, Kennington, of a boundary-wall at less than the prescribed distance from the centre of the roadway (Mr. H. Carnall).—Consent.

*Rotherhithe.*—A boundary-wall and entrance gates on the east side of Stoney-lane, Rotherhithe (the Proprietors of Hay's Wharf and Mr. J. A. Humphrey).—Consent.

*Southwark, West.*—That the application of Messrs. J. Douglass Mathews & Son for Messrs. Cook, Son, & Co., for an extension of the periods within which the erection of a five-story addition at the rear of No. 31, Bennett-street, Stamford-street, Southwark, to abut upon Bennett's-mews, was required to be commenced and completed, be granted.—Agreed.

*City of London.*—Stables on the west side of Duke-street and the east side of George and Catherine-wheel-alley, Bishopsgate-street Without (Mr. F. W. Foster).—Refused.

*Poplar.*†—Three houses on the east side of West-ferry-road, Millwall, next the depôt of the Board of Works for the Poplar District (Mr. H. Hooper for Mr. G. Middleditch).—Refused.

*Rotherhithe.*—Workshops and stables, with dwellings over, upon part of the Surrey Commercial Wharf, off the north side of Rotherhithe-street, Rotherhithe (Mr. E. Searchfield for Messrs. J. Williams & Co.).—Refused.

*Rotherhithe.*†—A warehouse on the south side of Tooley-street, Rotherhithe, upon the sites of Nos. 136 to 148, Tooley-street, at less than the prescribed distance from the centre of Magdalen-street (Messrs. F. Chambers & Son for Mr. F. J. Chambers).—Refused.

### *Space at Rear.*

*Greenwich.*—A building, to be used as a bank, on lot 18 of the Council's land on the west side of Trafalgar-road, Greenwich, at the corner of Pelton-road (Mr. A. Roberts for the London and Provincial Bank, Limited).—Consent.

*Dulwich.*—A modification of the provisions of Section 41 (1) (vi.) of the Act with regard to open spaces about buildings, so far as relates to the proposed erection of a three-story building, adapted to be inhabited by persons of the working class, on the south side of Bassano-street, Lordship-lane, Dulwich, with an irregular space at the rear (Mr W. R. Cornell for the Right Rev. Abbot Snow).—Refused.

### *Deviation from Certified Plan.*

*Finsbury, Central.*—Deviations from the plan certified by the District Surveyor under Section 43 of the Act, so far as relates to the proposed erection of a school-keeper's house on the site of No. 50, White Lion-street, Clerkenwell (Mr. T. J. Bailey for the School Board for London).—Consent.

### *Lines of Frontage and Width of Way.*

*Westminster.*—A drill-hall and headquarters on the west side of Regency-street, Westminster, to abut also upon Chapter-street and Frederick-street (Mr. W. C. Waymouth for the Electrical Engineer, Volunteer Corps).—Consent.

*Whitechapel.*—A one-story entrance lobby and lavatory at the Rectory House of St. Mary Matfelon, Whitechapel, to abut upon Union-street (Messrs. W. & F. Catmur for the Rev. J. A. Faithfull).—Refused.

### *Lines of Frontage, Width of Way, and Space at Rear.*

*Greenwich.*—The rebuilding of No. 220, Trafalgar-road, East Greenwich, to abut also upon Colomb-street (Mr. R. Whaley for Mr. W. C. Rose).—Refused.

*Greenwich.*—The rebuilding of No. 222, Trafalgar-road, East Greenwich, to abut also upon Colomb-street (Mr. R. Whaley for Mr. J. J. Faulkner).—Refused.

### *Width of Way and Construction of Buildings.*

*Whitechapel.*—A temporary wood and iron school building and corridor on the west side of Vallance-road, Whitechapel (Mr. T. J. Bailey for the School Board for London).—Consent.

*Greenwich.*—Retention of a temporary wooden shed erected on the forecourt of a house adjoining the "Anchor and Hope" public-house, Riverside, Charlton (Mr. J. Sargent).—Consent.

### *Formation of Streets.*

*Woolwich.*—That an order be issued to Messrs. Tapp & Jones, sanctioning the formation or laying out of two new streets for carriage traffic in continuation of Dock-street, Woolwich, and Francis-street, Woolwich, respectively. That the names Dock-street (in continuation) and Francis-street (in continuation) be approved for the new streets.—Agreed.

*Buildings for the Supply of Electricity.*

*Whitechapel.*—An electricity generating station and works at No. 27, Osborn-street, Whitechapel (Mr. M. W. Jameson for the Board of Works for the Whitechapel District).—

*The recommendations marked † are contrary to the views of the Local Authorities.*

## ARCHITECTURAL FEATURES OF HOLBORN TO THE STRAND STREET.

THE Improvements Committee of the London County Council submitted to the meeting of the Council on Tuesday the following Report dealing with the new street from Holborn to the Strand. Consideration of the report was adjourned for a fortnight :—

"We are proceeding with the acquisition of the property needed for the construction of the new street from Holborn to the Strand, authorised by the London County Council (Improvements) Act, 1899, and it becomes necessary for consideration to be given to the important question of the architectural features connected with the improvement. The scheme consists in the formation of a new street 100 ft. wide from High Holborn at Little Queen-street, opposite Southampton-row, proceeding in a southerly direction intersecting Great Queen-street, Sardinia-street, Vere-street, and Stanhope-street. After intersecting the last-named street the thoroughfare bifurcates; the western branch as wide as the main street passes in a south-westerly direction, crossing Drury-lane and entering Catherine-street and the Strand close to Wellington-street, in order to form an approach to Waterloo-bridge. The eastern branch, also of the same width as the main street, passes from Stanhope-street through New Inn to the Strand at St. Clement Danes Church. The scheme also provides for the widening of the Strand between Wellington-street and St. Clement Danes Church.

The two branch streets form a crescent, and it will be seen that the land between this crescent and the Strand will form a most valuable building site. To obtain the full value of this land it is of the utmost importance that every regard should be had to the architectural features of the elevations of the buildings to front the new street, the crescent road, and the Strand.

The Act authorising the improvement makes provision for the reinstatement of the Gaiety Theatre, the Gaiety Restaurant, and Messrs. Short's premises at the western end of the site between the crescent and the Strand. The new buildings, which will be designed by one architect already selected by the persons interested, will occupy an area of 25,100 square feet of land having a frontage to the crescent and the Strand of about 438 ft., which is equal to more than one-fifth of the frontage of the whole site bounded by the crescent and the Strand. This complete site contains 174,570 square feet of land, *i.e.*, about 4 acres. It will be divided into three plots. The central plot, which we will call plot A, will contain 125,270 square feet, or about 2 acres 3 roods 20 perches; the western plot (plot B) will contain 25,100 square feet, or 2 roods 12 perches; and the eastern plot (plot C) will contain 24,200 square feet, or 2 roods 8 perches. In order to afford light and air, and to more economically lay out the crescent island, the three plots will be divided north and south by two 50-feet ways. The Strand entrances to these ways will be for carriage traffic, but the northern entrances for foot traffic only. The latter entrances will be approached by steps from the crescent road, in order to overcome the difference in level between the crescent and the Strand. We may here state that the Act also provides for the reinstatement of the *Morning Post* premises on the triangular site which will remain after the removal of the existing Gaiety Theatre and the formation of the crescent road.

The length of frontage of the buildings, which will face the northern side of the widened Strand, will be 850 ft. The frontage of the southern side of the new crescent will be 1,080 ft.; whilst the length of frontage on the northern side of the crescent from Wellington-street to St. Clement's Inn will be 1,220 ft. The length of frontage on the eastern side of the main street from the crescent to Holborn will be 1,430 ft., and on the western side 1,300 ft. The total length of frontage, therefore, of the new buildings, which will be erected in connexion with the complete improvement, will be 5,880 ft., or nearly 1¼ miles.

From the facts already stated it will be evident that in connexion with this improvement the architectural features are of far greater extent and importance than has yet been the case in any improvement previously undertaken, either by the Council or its predecessor, the Metropolitan Board of Works.

London has materially suffered in the past from the fact that the architectural features of new main thoroughfares have not been adequately controlled by the authority carrying out the improvement. It is true that in one case—that of Northumberland-avenue—the Metropolitan Board submitted the designs for the elevations of the new buildings to the consideration of the Council of the Royal Institute of British Architects; but too little regard has been had in the past to considerations of architectural effect. The result of this apathy is too sadly shown in the cases of Shaftesbury-avenue and Charing Cross-road. In our opinion every effort should be made to secure that the great thoroughfare from Holborn to the Strand should, in addition to utility, possess beauty and civic dignity, as some of the grand thoroughfares in certain continental cities. Measures should accordingly be taken to insure harmony, though not perhaps similarity of design in the architectural treatment of the buildings to be placed upon the frontages of the new crescent, and on the northern side of the Strand, and perhaps in the main thoroughfare itself.

If this be secured, the Council will obtain the highest possible amount for the land, and the ultimate net cost of the improvement will be reduced in accordance with the increased dignity which the new thoroughfare may possess.

It should be stated that whilst the estimated gross cost of the improvement is put at 4,862,500*l.*, the net cost, after deducting recoupment by disposal of the land, is estimated at only 774,200*l.* It will be seen, therefore, that the value of the surplus land is estimated at above four millions sterling. For this amount to be realised it is of the first importance that the full value of the land should be obtained by giving every consideration to the question of architectural and other features.

As a result of careful consideration, we have decided to advise the Council to invite designs from certain leading architects for the elevation of the buildings to front the northern side of the Strand, and the northern and southern sides of the new crescent road, as far as the junction with the main street. We consider that eight leading architects should be invited; that the invitations should be carefully worded, so that the Council should not come under any obligation to select any particular design, or to employ any of the architects, and that the Council should have a perfect right to make what use it likes of the plans to be submitted. We have further decided to recommend that four of the architects should be nominated by the Council, and four by the Royal Institute of British Architects, and that the premium to be paid to each architect for the designs should be 150*l.* The total sum to be expended would, therefore, not exceed 1,200*l.*, and this amount is fully covered by the estimate already approved by the Council. We may state that we authorised the Council's Architect to have a conference with some of the leading members of the Royal Institute of British Architects, with the result that the foregoing conditions have the full approval of the Council of the Institute.

It has been suggested to us that the competition should be perfectly open, that no particular architect should be nominated, and that the number of designs should not be limited, a premium being paid merely for the best design. After full consideration, however, we are strongly of opinion that it will be much better for the Council to invite designs from merely eight selected architects, and by so doing secure the work of the leading professional men who, without doubt, would not send in designs if it were an open competition.

As a result of careful deliberation we have drawn up, in consultation with the Council's officials and the Council of the Royal Institute of British Architects, the following conditions proposed to be attached to the invitation to the eight architects in question—

*Proposed Form of Invitation.—London County Council (Improvements) Act, 1899, 62 and 63 Vict. cap. 266. Proposed New Street from Holborn to the Strand.*

"i. In order to take some measures to ensure harmony of design in the architectural treatment of the buildings to be placed upon the frontages of the new streets in the Holborn to Strand improvement the London County Council has resolved to invite eight architects (four to be nominated by the Council of the Royal Institute of British Architects and four by the London County Council) to submit designs for the elevations only, in order to obtain the best professional views of the artistic treatment of this great improvement.

ii. The elevations should be accompanied by the necessary explanatory block plans of the frontages proposed to be treated in connexion with the improvement, fronting on the Strand and on the curved street proposed to be formed between Wellington-street and Clement's Inn.

iii. The Council will pay a sum of 150*l.* to each architect who submits a design in conformity with the accompanying instructions.

iv. On payment of the above-named amount, each design is to become the absolute property of the Council, who shall be at liberty to make such use of the designs as it may see fit in connexion with the object detailed in the first paragraph.

v. The Council will not be under the obligation to employ, or secure the employment of, any of the selected architects to carry out their designs, or in any other capacity, or to make any further payment beyond the amount before stated with regard to the designs; the before-stated payment is to be considered final.

vi. The land upon which it is proposed to build is indicated by the red lines on the block plan of a portion of the proposed improvement to a scale of 88 ft. to 1 in., showing the general arrangement and the sites allocated for reinstatement of premises to be demolished. This arrangement may be varied as regards frontage, but no portion of the buildings must project beyond the black lines.

vii. The designs are to be in black lines only, without colour, with the exception of a light tint of Indian ink on the doors and windows.

viii. The drawings are to be in geometrical projection, but one bird's-eye view taken from an imaginary point to the south-west of the site may be submitted by each architect.

ix. The drawings submitted must include—

(*a*) An outline elevation, to a scale of 32 feet to one inch, of the frontage next the Strand, the triangular plot next Wellington-street, and of the two sides of the curved street between Wellington-street and Clement's Inn.

(*b*) Elevations to a scale of 8 ft. to an inch of the half of the Strand frontage from the end next Wellington-street.

(*c*) Elevations to a scale of 8 ft. to an inch of the east and west sides of the triangular plot next Wellington-street.

(*d*) Elevations to a scale of 8 ft. to an inch of the north side of the curved street to the westward of the proposed main street leading to Holborn showing the arrangements of the salient angle.

(*e*) Sections to a scale of 8 ft. to an inch through the front walls of the several buildings showing the arrangement of the roofs.

(*f*) Details to a scale of 4 ft. to an inch of special features may be furnished if necessary.

x. The buildings may be 80 ft. high from the level of the pavement to the top of the principal cornice, attic, balustrade or blocking, with not more than two stories in the roof.

xi. The difference in level on the various façades may be dealt with by either ramped features or by taking advantage of the breaks which will occur where streets are intended.

xii. The ground floor may be 18 ft. high, the other floors not less than 10 ft. from floor to floor, with the exception of the rooms in the roof, which are to be 9 ft. high.

xiii. The pavement in front of the Strand frontage may be taken to be practically level, the gradient of the curved street will be 1 in 55 from the Charing Cross or western end, and 1 in 50 from the eastern end.

xiv. It may be desirable to treat the centre block of the crescent-shaped island as devoted to one building, the streets at the flanks of it being approached by arcaded footways with steps up towards the curved street on the north side, and by a carriage road from the end leaving the Strand.

xv. The materials to be employed in the elevations to be stone, marble, or granite. No other materials will be admissible.

xvi. The style suggested is Palladian freely treated and of a simple character, it being borne in mind that the buildings may be intended for commercial purposes.

xvii. The designs should be drawn on sheets of double elephant paper, 3 ft. 4 in. by 2 ft. 3 in., connected if required to increase the length, and mounted on strainers, with margins 3 in. wide.

xviii. The designs which will be publicly exhibited are to be sent in, addressed to the Architect to the Council, within six weeks of the date of nomination by the Institute and the Council respectively."

We think that it is unnecessary for us to emphasise the fact that, having regard to the magnitude and importance of the improvement in question, which, as already stated, involves a gross outlay of nearly five millions sterling, it is absolutely necessary to obtain the best professional views of the artistic treatment of the improvement, particularly as by so doing the Council will realise the greatest possible amount for its land. The recommendations which we have to submit are accordingly as follows :—

(*a*) That, in connexion with the Holborn to the Strand Improvement, the Council do invite eight leading architects to submit designs for the elevations of the buildings proposed to be erected, fronting on the Strand and on the crescent road proposed to be formed between Wellington-street and Clement's Inn; the terms and conditions of the invitations to be those set out in the foregoing report of the Improvements Committee.

(*b*) That four of the eight architects in question be nominated by the London County Council, and four by the Council of the Royal Institute of British Architects.

(*c*) That the Council do authorise the Improvements Committee to take all the necessary steps to give effect to the foregoing recommendations, including the selection of the four architects to be nominated by the Council.

SCHOOLS, LEYTON, ESSEX.—The new schools of the Leyton School Board at Goodall-road have just been opened. The buildings form the ninth block of schools erected by the Board. The main building provides accommodation for 1,576 children —616 infants, 480 girls, and 480 boys. Each department is complete in itself, with its own cloak-room, lavatories, and teachers' rooms. On each floor there are eight class-rooms, seating from fifty to seventy children each. In addition, there is on each floor a hall for assembling and physical drill. The total area covered by the schools is 1½ acres, five-sixths of which is laid out in playgrounds. The works have been carried out from the plans and under the supervision of Mr. William Jacques, the Architect to the Board. The total cost, including furniture, is about 22,500*l.*

## THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday at the County Hall, Spring Gardens, Lord Welby, Chairman, presiding.

*Loans.*—On the recommendation of the Finance Committee, it was agreed to lend the Hackney Vestry 23,550*l.* for paving works; the Wandsworth District Board 1,500*l.* for the erection of stabling, cart sheds, &c.; the Bethnal Green Vestry 17,000*l.* for the erection of baths and washhouses; the Camberwell Vestry 11,900*l.* for sewerage and paving works; the Poplar District Board 24,000*l.* for paving works; the St. George's Guardians 4,200*l.* for the purchase of land and premises for a site upon which to erect a receiving-house for children; and St. Olave's Guardians 74,600*l.* for the erection of a workhouse and laundry.

*Technical Education.*—On the recommendation of the same committee it was resolved:

"That, considering that the Council has received requests from the managers of various schools and institutions in the Administrative County of London to make provision in aid of technical or manual instruction within the county, the sum of 85,000*l.*, being part of the moneys received by the Council under Sub-Section 1 (b) of Section 1 of the Local Taxation (Customs and Excise) Act, 1890, in respect of the financial year ending March 31, 1900, be, and the same is hereby, appropriated for the purposes of technical or manual instruction within the meaning of the Technical Instruction Acts, 1889 and 1891."

*Drainage By-laws.*—The Public Health Committee brought up the following Report as to drainage by-laws:—

"In accordance with the resolution of the Council of July 25 last, application was made to the Home Secretary for confirmation of the by-laws made by the Council under Section 202 of the Metropolis Management Act, 1855, in relation to the drainage of buildings. As the power of confirming by-laws under this section was transferred from the Home Secretary to the Local Government Board by the Metropolis Management Acts Amendment (By-laws) Act, 1899, which became law on August 1, the by-laws were forwarded by the Home Office to the Local Government Board, and they desired that the Council would re-consider the by-laws as regards two points—viz., the size of ventilating pipes and the exemption of the City. With regard to the size of ventilating pipes, the Board objected to the proviso (shown in italics) to By-law 8, Sub-Section (iv.), which is as follows—

'(iv.) He shall cause every pipe or shaft which may be used in connexion with any of the arrangements hereinbefore specified to be of a sectional area not less than that of the drain with which such pipe or shaft may communicate; *provided always that such pipe or shaft, if it shall have an internal diameter of not less than 4 in., shall be deemed to provide adequate ventilation for any drain of a larger diameter.*'

We accordingly gave the matter further consideration, and on November 13 last we informed the Board that we thought that the object which the Board had in view would be met, and that the numerous objections to the clause as originally drafted without the proviso would be to a great extent obviated if the clause were altered so as to read as follows—

'8 (iv.) He shall cause every pipe or shaft which may be used in connexion with any of the arrangements hereinbefore specified to be of a sectional area not less than that of the largest drain which such pipe or shaft ventilates; provided that where such drain is of a greater internal diameter than 4 in. two or more pipes or shafts of an aggregate internal sectional area of not less than four-fifths of the internal sectional area of such drain shall be deemed to provide adequate ventilation for such drain.'

This amended clause, while requiring adequate ventilation for the main drain, *i.e.*, "the largest drain" of the building, would enable this ventilation to be provided either by one ventilating pipe of equal sectional area to the drain or (if that were inconvenient and undesirable owing to the size of the drain) by two or more ventilating pipes equal in aggregate sectional area to at least four-fifths of that of the drain. The expression "four-fifths" was used in order to allow two 4-in. pipes from branch drains to ventilate a 6-in. main drain, although the sectional area of two 4-in. pipes is not quite equal to that of a 6-in. pipe. The effect of the amended clause would therefore be that if a builder did not wish to put up a 6-in. or 9-in. ventilating pipe, he could ventilate his 6-in. or 9-in. drain by two or more smaller ventilating pipes carried up from that drain or from branch drains. The Local Government Board have now intimated their willingness to approve the clause as amended. As regards the omission by the Council of the clause which proposed to exempt the City from the operation of the by-laws the Board state that they have given the matter further consideration and are of opinion that the by-laws should not apply to the City, and that this should be made clear by a clause in the series. They further state that they consider that it is competent to the Council to restrict the application of the by-laws to a portion only of the administrative county, and they desire the re-insertion of a clause on the subject. As stated in our report of July 25 last, we think that the question whether the by-laws apply to the City is determined by the statute, and that if the statute excludes the City an exempting by-law is unnecessary, and if it includes the City such a by-law would be bad. This view was, however, communicated to the Local Government Board, and as they still adhere to their decision that the City should be exempted, we do not see that the Council can now do otherwise than reinsert the exemption clause. An amendment of the clause relating to the composition of concrete has been made at the desire of the Council's architect, and the Local Government Board are prepared to approve this alteration. Subject to the alterations above referred to, the by-laws which we now submit for adoption by the Council are the same as those made on May 2 and 16 last,* and confirmed by the Council at a subsequent meeting on July 25. It will now be necessary for the Council to repeal the latter and to make the amended by-laws appended to this Report and confirm them at a subsequent meeting before making formal application to the Board for their approval. We may say that a question has been raised by the Islington Vestry as to their power to enforce the by-laws, but we are advised that the by-laws will be binding upon all parties, and that it will be the vestry's duty to see that they are observed. We recommend—(*a*) That the Council do repeal the by-laws made on May 2 and 16, 1899, under Section 202 of the Metropolis Management Act, 1855, and confirmed on July 25, 1899. (*b*) That the Council do, pursuant to the provisions of Section 202 of the Metropolis Management Act, 1855, make by-laws in the terms set out in Appendix I. to this report, and that the seal of the Council be affixed to copies of such by-laws."

The amended clause relating to the composition of concrete, referred to above, is as follows:—

"He shall cause all concrete used in connexion with any such drain, whether under a building or not, to be composed of clean gravel, hard brick broken small, or other suitable ballast, well mixed with clean sand and good Portland cement in the proportion of two parts of sand, one part of cement, and six parts of other material."

Mr. H. Ward said he opposed the recommendations on the ground that the proposals of the Local Government Board would result in an unnecessary increase in the cost of building. He moved that the recommendations be referred back.

Mr. Phillimore seconded.

Mr. Howell Williams said the ideas of the Local Government Board in this matter were ridiculous.

The amendment was agreed to on a show of hands, thirty-four voting for it and only two against.

*New Theatre, Tottenham-street.*—The Theatres and Music-halls Committee reported that they had considered nine plans, submitted by Mr. G. H. Greatbach on behalf of Miss Kate Brand, in respect of a theatre which it is proposed to erect in Tottenham-street, Tottenham Court-road, on the site of the old Prince of Wales' Theatre and the six houses fronting Pitt-street. The site in question has a total boundary of 370 ft., of which 100 ft. front to Tottenham-street and 103 ft. to Pitt-street. It does not, however, comply strictly with the Council's regulations, inasmuch as Tottenham-street varies in width from 40 ft. to 36 ft. and Pitt-street from 40 ft. to 38 ft. As, however, considerably more than half the total boundary abuts on public thoroughfares, the Committee thought that the fact that neither of these thoroughfares is 40 ft. wide throughout need not be regarded as an objection. The theatre will accommodate 1,076 persons, and will be constructed in accordance with the regulations. They recommended that Mr. Greatbach be informed that the Council will be prepared to grant a certificate under Section 12 of 41 and 42 Vict., cap. 32, to the owner of such building, on being satisfied that the premises have been completed in accordance with the plans referred to and on other conditions. This was agreed to.

*Banstead Asylum.*—The Asylums Committee reported that they have accepted the tender of Messrs. G. Waller & Co., amounting to 588*l.*, for the extension of the gasworks at this asylum.

*Lambeth Bridge Approach.*—The Bridges Committee recommended, and it was agreed, that the estimate submitted by the Finance Committee for 2,500*l.* for the purchase of property belonging to Messrs. Doulton in Lambeth-road and Norfolk-place, for improving the Lambeth approach to Lambeth Bridge, be approved.

*Greenland Lock Swing Footbridge.*—The same Committee also recommended and it was agreed that the drawings submitted by Sir J. W. Barry, on behalf of the Surrey Commercial Docks Company for the construction of a swing footbridge across the entrance lock to the new Greenland Dock, be approved.

*Fire Stations.*—On the recommendation of the Fire Brigade Committee it was agreed:—

"That the estimate of 3,818*l.* submitted by the Finance Committee in respect of the enlargement of the Greenwich station be approved; that, subject to the passing of the annual maintenance vote for 1900-1, the Council do sanction an expenditure of 4,703*l.* for the work of altering and enlarging the station; that the work be executed by the Council without the intervention of a contractor: and that the drawings and specifications be referred to the manager of works for that purpose."

"That the estimate of 518*l.* submitted by the Finance Committee in respect of alterations at the Holloway station, to enable a horse-escape to be kept there, be approved; that the Council do sanction an expenditure of 498*l.* for the work; that the work be carried out by the Council without the intervention of a contractor; and that the drawings and specification be referred to the manager of works for that purpose."

*Use of Hydrants for other than Fire Purposes.*—The Committee recommended, and it was agreed, that the Council do not appeal against the decision of the Queen's Bench Divisional Court in the case of the Council *v.* the East London Waterworks Company with respect to the use of fire hydrants.

Having transacted other business, the Council adjourned.

* The by-laws were printed in full in our issue for April 1, 1899. See also the *Builder*, May 6 and 27, 1899.

## *ARCHITECTURAL SOCIETIES.*

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.—In connexion with the Leeds and Yorkshire Architectural Society, a lecture was delivered, on the 16th inst., at the Society's rooms in Leeds, by Mr. George Walton, of Glasgow and London. The chair was occupied by Mr. T. Butler Wilson. The lecturer dealt with the subject of "Interior Decoration."

NORTHERN ARCHITECTURAL ASSOCIATION.—On the 14th inst., in the lecture theatre of the Mining Institute, Newcastle, Mr. Frank Caws read a paper to the members of the Northern Architectural Association on "Concrete Floors." In the course of his remarks, Mr. Caws gave an account of the manner in which he had used concrete in a Sunderland building. "I have been engaged," he said, "on many concrete floors, in all of which I have adopted the slab principle successfully, varying the mode of construction in sundry details with the special requirements of each case, and as further experience suggested. I have always been particular to obtain rigid strong centering, and I cannot too emphatically caution my fellow architects as to the importance of this item. Any attempt to save money by scamping the centering is likely to lead to trouble, and prove very false economy. The greatest difficulty in dealing with cement concrete floors is due to the natural expansion which the material undergoes in process of setting. This expansion is much greater when the cement is new and hot than when it is old and cool. It is not, however, the expansion itself which causes the trouble so much as the smaller degree of contraction which follows expansion in the process of setting. This contraction causes cracks, which generally occur over the supporting girders where the concrete is generally thinnest. These cracks have really no appreciable effect upon the strength of the concrete, but all the same they are apt to cause uneasiness and want of confidence in the minds of those who do not understand what they are occasioned by. By using carefully selected cool cement, and by taking certain precautions as regards the size of the slab and its mode of casting, the shrinkage can be so minimised as to almost entirely avoid such cracks. I would like to point out at this stage that I consider sand a most improper material to mix with cement in concrete floors. . . . The fact is, if a very fine sand be used, instead of helping the cohesion of the concrete it tends to disintegrate it, so that when sand is employed to give the necessary smoothness to

the finishing of the upper surface of the cement concrete floor, the surface, when subjected to the traffic, is likely to scrape off and give off sandy dust, and eventually present a very shabby appearance; therefore I have found it best to employ in finishing the surface fine crushed granite instead of sand. In making fireproof floors for cottages I consider if proper care were taken in the centering it would be better to do without plaster ceilings altogether, and be content with the natural impression of the wood upon the cement, whitewashed. By such means, and also by avoiding needlessly thick slabs, the expense of such floors can be brought within such limits as to render the fireproof dwellings of a working man cheap enough to be a good commercial investment. . . . The limitations as to the size of cement concrete floor slabs are largely determined by the quantity which a gang of men can cast in one day. In designing a large expanse of flooring it is necessary to subdivide the area into squares of reasonable extent, and I may say that in my own practice I consider a square of about 150 super. feet a reasonable size to arrange for, although in some cases I have found it necessary to make them much larger. The steel girders, which form the divisions between the slabs, should be made strong enough to carry the weight of the slabs themselves and of their greatest proposed loads; but it must not be supposed that when the slabs are set hard these steel girders will necessarily be called upon to sustain these weights. I say necessarily, for much depends upon the manner in which the girders are placed. . . ." In conclusion the lecturer said he would focus, in the form of general rules, some of the conclusions to which twenty years of special experience had led him in regard to the construction of concrete slab floors:—1st. To take pains to obtain old cement. 2nd. To use good broken brick aggregate, and not sand, in the proportion of 4 of brick to 1 cement, for the body of the slab, and fine crushed granite without sand for the surface coating, having about 3 of granite to 1 of cement. 3rd. To adopt, as precautionary provision, sheep wire netting as the base, and steel angle or the bars, weighing more than 1½ lbs. per lineal foot, spaced about 3 ft. apart on the netting. 4th. To consider a slab 10 ft. square by 4 in. thick, as capable of sustaining a load of 9 cwts. per foot, including its own weight, and to reckon that every slab will bear, per square foot, more or less than 9 cwts. directly in proportion to the square of their thickness, and inversely in proportion to the cube of their span. When the slab is rectangular the minimum span has to be considered the span. 5th. To avoid casting slabs in frosty weather. 6th. To insist upon organising the gangs of workmen so as to cast as large an area of slabs as possible in one heat, and never to allow a slab to be left overnight with its area only partially cast. 7th. To insist upon strong centering, and to keep it all standing not less than five weeks after the last slab of the series of one flat is cast, and to absolutely forbid the sudden and careless removal of the centering.

ARCHITECTURAL ASSOCIATION OF IRELAND.—A meeting of the Architectural Association of Ireland was held on the 20th inst. at the Grosvenor Hotel, Mr. George P. Sheridan presiding. Mr. W. R. Maguire, Vice-President, Institute of Heating and Ventilating Engineers, London, read a paper on "Artificial Heating." He explained the nature of artificial and natural heat, and dealt very fully with the amount of heat required in different kinds of buildings. He compared the American style of heating with the British to the advantage of the former. In America engineers kept more in touch with the architect, which prevented alterations having to be made when the building was almost complete. Hot-air furnaces were often very dangerous. Steam and hot water had now displaced hot air in America. The low-pressure system was the safest, and it was specially useful for horticultural buildings. The lecturer then went fully into the details of steam heating, both by the one-pipe and two-pipe systems. In conclusion, he drew attention to a new departure among architects, who, when obtaining tenders from engineers, asked them to get plans up at considerable expenditure without any result following. It would be much more satisfactory if contractors in the first instance were supplied with everything necessary to enable them to give estimates.—On the 14th inst. the fourth annual dinner of the Architectural Association of Ireland was held at the Royal Hibernian Hotel, Dawson-street. Mr. George P. Sheridan, President of the Association, occupied the chair, and there was a large attendance. After dinner, the toast of "The Queen" was honoured. The President proposed "The Architectural Association." The effect of their work in forwarding architectural education was already felt, though the Association had been but some three years in existence. Mr. R. M. Butler responded. He mentioned that some thirty years ago an Architectural Association was started in Dublin, but after a few years it languished and died. Until the starting of the present Association there was no school in Dublin to teach architecture to the architects' pupils. With the work they had done up to the present they might be satisfied. They had no more active supporter than Mr. Thomas Drew, President of the Institute of Architects. The toast of "Our Guests" was next drunk. Mr. A. E. Murray and Mr. John Good responded. Other toasts followed.—On the 10th inst. the members visited the Eblana Cement Works. Mr. A. E. Mills, managing director of the Eblana Cement Company, and Mr. Schunimann, also of the company, piloted the party through the works and into the laboratory, explaining each step in the manufacturing process.

## *COMPETITIONS.*

CHURCH, BARNSLEY.—Forty-six sets of designs and plans have been sent in in the competition for designs for a new church and vicarage to be erected at the junction of Park-road and Race Common-road, Barnsley. The premium offered is 50*l*. The church is to cost 5,500*l*., and the vicarage 1,500*l*.

GLASGOW GENERAL HOSPITAL.—We are asked to state that the time for sending in designs for the above-named hospital has been extended to April 19.

## *ARCHÆOLOGICAL SOCIETIES.*

SOCIETY OF ANTIQUARIES OF SCOTLAND.—The usual monthly meeting of this Society was held in the Library at the Antiquarian Museum, Queen Street, on the 12th inst., Mr. Gilbert Goudie in the chair. The first paper read was a description of the towers of James Fifth at Holyrood Palace, by Mr. John Sinclair, F.S.A., Scot. From various references to the Palace, he inferred that there was good ground for attributing the oldest part of the structure to James IV. From other circumstances it was inferred that the towers shown in the views of Hollar and Gordon of Rothiemay, were the work of James V., a conclusion borne out by an elaborate examination of various points in connexion with their external and internal construction, and their relation to other parts of the building as it existed in the time of Mary Stuart. In the second paper, Dr. William W. Ireland, F.S.A., Scot., gave some further supplementary notes on the Scottish De Quenceys. After referring at some length to several disputed questions relating to the early branches of that family, he remarked that it seemed likely that when living at their estates in East Lothian, the De Quenceys resided at Fawside Castle, which is by far the best military situation in the neighbourhood. Speaking of the ruins remaining, Messrs. Macgibbon & Ross, in their "Castellated Architecture of Scotland," remark that as there is no documentary evidence of the date of this keep, they could not from its style ascribe it to an earlier period than the latter half of the fourteenth century. But he thought that, as it was not by any means easy always to distinguish between a keep of the twelfth century and one of the fourteenth, it was, at least, possible that this keep, which bears the signs of great antiquity, may have been the donjon of these almost-forgotten Norman lords. In the third paper Mr. Alexander Munro described a rude stone slab in the moorland at Strathy, Sutherlandshire, which bears on one face, very clearly incised, a cross of peculiar form, nearly three feet in length. The summit and the base, as well as the two arms, terminate in circles, formed by the expansion of the two outer lines of the cross. In the centres of the four circular expansions are hollows or cups, of about three inches in diameter, and in the centre of the cross are traces of a fifth cup. In the last paper, Mr. William Buchan, F.S.A. Scot., gave a notice of a bronze scabbard tip of late Celtic type, which was recently found newly thrown up in a molehill on the farm of Glencotho, in Holms Water, Peeblesshire. It is of cast bronze, and bifurcated to fit the end of the scabbard, having the outer surface ornamented by a wavy scroll of the peculiar curves of the late Celtic ornamentation. These curves combine in an ornament somewhat resembling a leaf or a bird's head, in the centre of which is a circular socket, which had been apparently filled with enamel.—*Scotsman.*

## BUILDING TRADES' GIFT TO THE NATION:

### HOMES FOR DISCHARGED SOLDIERS.

WE are asked to announce the following further list of additional contributions and subscriptions:—

### *Additional Contributions for Individual Sections of the Work.*

Messrs. Shanks & Co. (Barrhead, near Glasgow).—The entire sanitary fittings for one home.
Messrs. Drew-Bear, Perkins, & Co.—Sixteen 25-ft. steel joists.
Messrs. Richard Moreland & Son.—The steel principals for the recreation hall.
Messrs. Dorman, Long, & Co.—Sixteen 25-ft. steel joists and 50 cwt. steel lintels.
The Edison and Swan United Electric Company, Limited (per Mr. Max Byng).—Electric lamps and holders for all six homes.
Messrs. Sharpe, Jones, & Co., Parkstone, Dorset.—1,800 ft. of pipes for rainwater drains.
The Rugby Portland Cement Company (preliminary), Rugby.—One truck-load Portland cement.
Messrs. Stanley Bros., Nuneaton.—250 yds. of tile flooring for one home.
Messrs. R. H. & J. Pearson.—Four complete grates, with mantels, overmantels, and hearths.
Messrs. Craven, Dunnill, & Co., Jackfield, Shropshire.—120 yds. of mosaic flooring.
Messrs. E. W. Payne & Co., Staple Hill, near Bristol.—50 cubic feet pennant stone for door cills.
The Easily Cleaned Window Company, Shrewsbury (per Mr. Thos. Gregory.) — Twenty sets patent window fittings.
Messrs. Treasure & Son, Shrewsbury (per Mr. Thos. Gregory).—Twenty windows for upper floors.
Messrs. J. & H. Patteson, Manchester.—Marble tablets to the value of 25*l*.
Messrs. William Newman & Sons, Birmingham.—The door springs for entrance doors.
Messrs. Thos. G. Litchfield.—Two chimney-pieces.
Messrs. G. H. Renton & Co.—Flooring for one home.
Messrs. Young & Martin (Stratford).—Six grates.
Messrs. G. S. S. Williams & Son.—The staircase for one home.
Messrs. Ashton & Green Iron Company.—Stoves and ranges for one home.
The Cyanite Paint Company.—"Fireproof" paints for recreation hall, engine house, and kitchens.
Mr. John Bellamy.—A galvanised iron cistern and a hot water tank.

### *Various Additional Gifts for the Equipment of the Homes.*

Messrs. Wilson & Stockall, Lancashire.—One hand-wheeled litter ambulance.
The Ratner Safe Company.—A large iron safe.
Messrs. W. Summerscales & Sons.—Two wringing machines.
Messrs. Wm. Fisher & Son, West Bromwich, Staffs.—Seating for fifty persons.
Messrs. H. Addison & Co., Wellington, Salop.—Seats to the value of £10.
The Berkefeld Filter Company.—Five filters.

### *Additional Subscriptions.*

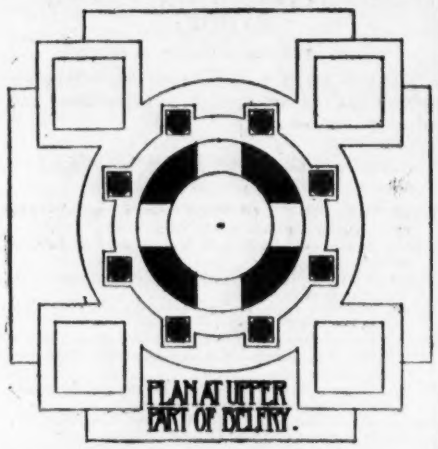
| | £ | s. | d. |
|---|---|---|---|
| Messrs. Higgs & Hill | 50 | 0 | 0 |
| The Editor and Proprietors of the *Electrical Review* | 26 | 5 | 0 |
| The Proprietor of the *Clayworker* | 25 | 0 | 0 |
| Mr. Henry Northcroft | 21 | 0 | 0 |
| Mr. Charles Cox, Hackney | 10 | 10 | 0 |
| Mrs. S. Marsland, Camberwell | 5 | 5 | 0 |
| Mr. Fredk. Wright (Renter, Warden Tylers' and Bricklayers' Company) | 5 | 5 | 0 |
| Mr. Sidney Marsland, Ladywell | 2 | 2 | 0 |
| Workmen of Messrs. Rider & Son (per Mr. W. Gerring) | 1 | 4 | 6 |
| Workmen of Messrs. Rider & Son (per Mr. H. P. Colliver) | 1 | | 6 |
| Miss Marsland, Camberwell | 1 | 1 | 0 |

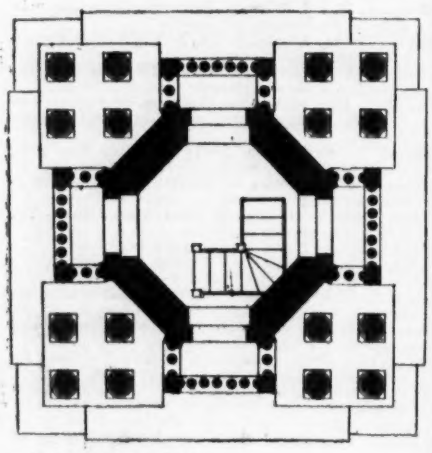
ARTIZANS', LABOURERS', AND GENERAL DWELLINGS COMPANY.—The thirty-third annual Report of this company gives the statement of the extensive London house properties of the company as follows:—Shaftesbury Park—30 shops, 1,135 single houses, 33 double houses, and one block of 22 tenements; Queen's Park, Harrow-road—116 shops, 2,072 single houses, 108 double houses, and a public hall; Noel Park, Wood Green—85 shops, 1,076 single houses, and 174 double houses; Leigham Court, Streatham—251 houses and 341 maisonnettes let and occupied, 60 houses and 101 maisonnettes structurally complete, and 28 maisonnettes in progress. It is proposed during 1900 to build 6 maisonnettes to complete Barcombe-avenue, and 32 maisonnettes on the west side of Hillside-road, also to lay out the grounds between Hillside-road and Kingsmead-avenue, and subsequently to commence building operations on the lower ground in Kingsmead-road.

## Illustrations.

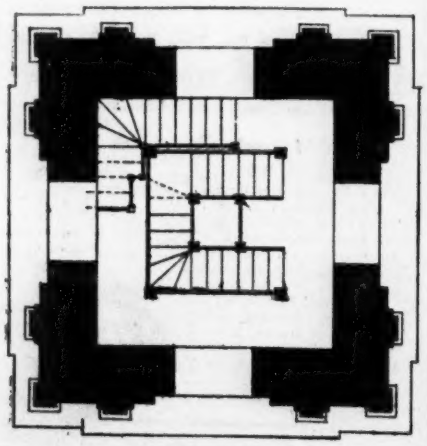
### DESIGN FOR A CLOCK TOWER.

THIS design, which was submitted by the author in competition for the Tite prize given by the Institute of Architects, we publish as being the one to which in our opinion the second prize, or medal of merit, should have been awarded, as it properly fulfils the condition of being a study in Italian architecture, which was not the case with the design placed second by the Council of the



PLAN AT BELFRY.

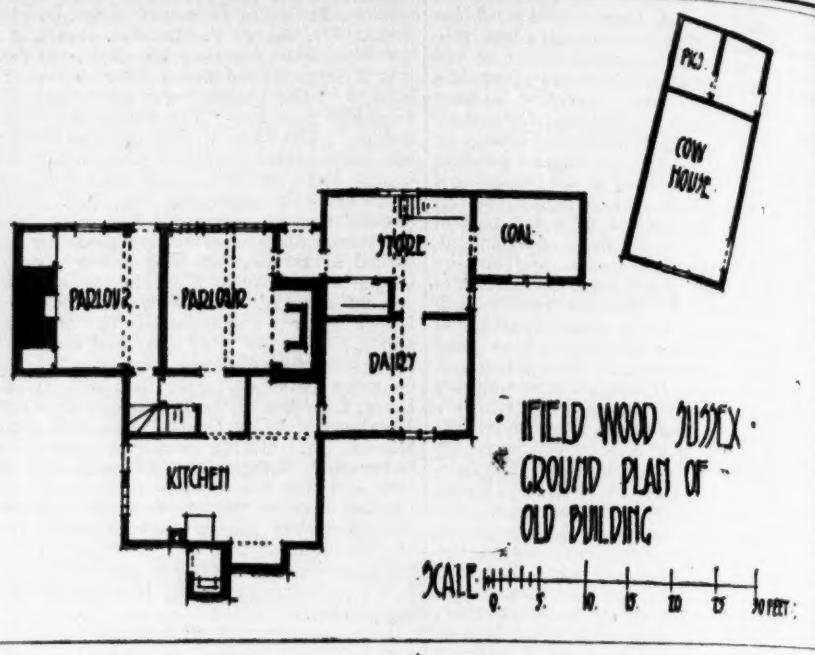


PLAN AT CLOCK

*Design for a Tower. Plans.*

Institute. The author is Mr. D. McKay Stoddart, of Glasgow. The following is his description of his intention in the design :—

"The tower was designed in accordance with the conditions of the competition, for an isolated situation, but in order to enhance its effect, it is designed as rising from a flight of steps, which lead from the square to the base of the tower, access being gained from all sides. The severe treatment of the lower part emphasises the richness of the clock and belfry chambers, as seen in many examples of Italian campanili. The style is a free treatment of Italian architecture."




### COLD ASH, NEAR NEWBURY.

THIS house has just been erected by Mr. R. B. D. Acland on the hills near Newbury, overlooking the valley of the Kennett. Local grey bricks have been used for the walls, with red brick dressings, and the roof is covered with tiles. A feature of the design is the large verandah, from which splendid views of the distant country can be obtained.

Messrs. T. Boxall & Son, of Pangbourne, were the builders, their contract being just over 3,000*l*., Mr. Leonard Stokes of Westminster, being the architect.

The drawing was exhibited at the Royal Academy last year.

### HOUSE AT WINDERMERE : THE HALL.

THIS picturesque interior is from a drawing by Mr. M. H. Baillie Scott, the architect of the house, and was exhibited at the last Royal Academy exhibition.

We have not received any details in regard to it from the architect.

### STAIRCASE, KELLY HOUSE.

THE staircase shown occupies the re-entering angle of the central court, and is entered from the gallery on both floors.

The gallery, about 75 ft. long by 12 ft. wide, communicates with the public rooms, and connects with the private wing. The windows and ingles are deeply recessed, and arched with boldly-moulded stone arches, the windows being filled with simple lead work. The house was erected about eight years ago.

Mr. W. Leiper, R.S.A., is the architect. The drawing was exhibited at the last Royal Academy exhibition.

### COTTAGES, PORT SUNLIGHT, CHESHIRE.

THIS group of five cottages has recently been completed for Messrs. Lever Brothers, Limited, Port Sunlight, Cheshire. The materials used are : for the base, local red freestone, and for the walls above the base up to the top of ground-floor windows, 2¼-in. Ruabon wire-cut facing bricks, set with ⅜-in. white joint, above which the brickwork is finished with cement slightly tinted. The woodwork is in Odessa oak, and the roofs are covered with brindled tiles.

The accommodation is that usually provided by Messrs. Lever Brothers for this type of cottage, and consists of large living-room, scullery, pantry, bath-room, and three bedrooms. The builder was Mr. John Vernon, of Tarporley, and the architects Messrs. Wilson & Talbot, of Liverpool.

### IFIELD WOOD, SUSSEX.

IFIELD WOOD, when purchased by my client, was a ruinous small farm house, constructed of rough timber framing filled in with brickwork and partly covered with weather tiles. So far was it decayed that it was very doubtful whether it could be kept standing at all, or even made weather-proof ; but the attempt was made, and it succeeded.

The ground story was not more than 6 ft. 6 in. high—an additional foot or 15 in. was gained by sinking the floor and underpinning the walls ; and a new wing was added. The old structure was retained almost entirely, the weather tiling being undisturbed, and the roofs were relaid with old tiles on a concrete bed levelled over the existing spars.

The new porch, with a bath-room over, and the staircase adjoining, were built on part of the site of a lean-to kitchen which was removed. The gardens round the house were newly laid out, the site drained, and new stables built.

I enclose a plan of the house before the alterations. Perhaps it may be of some slight interest. THOMAS E. PRYCE.

### BOOKS RECEIVED.

PAUSANIAS'S DESCRIPTION OF GREECE. Translated, with a commentary, by J. G. Frazer. In Six Volumes. (Macmillan & Co.)

THE MANAGEMENT OF DYNAMOS. By G. W. Lummis-Paterson. (Crosby Lockwood & Son.)

THE ART-PORTFOLIO. Part 10. (W. B. Jobson & Co.)

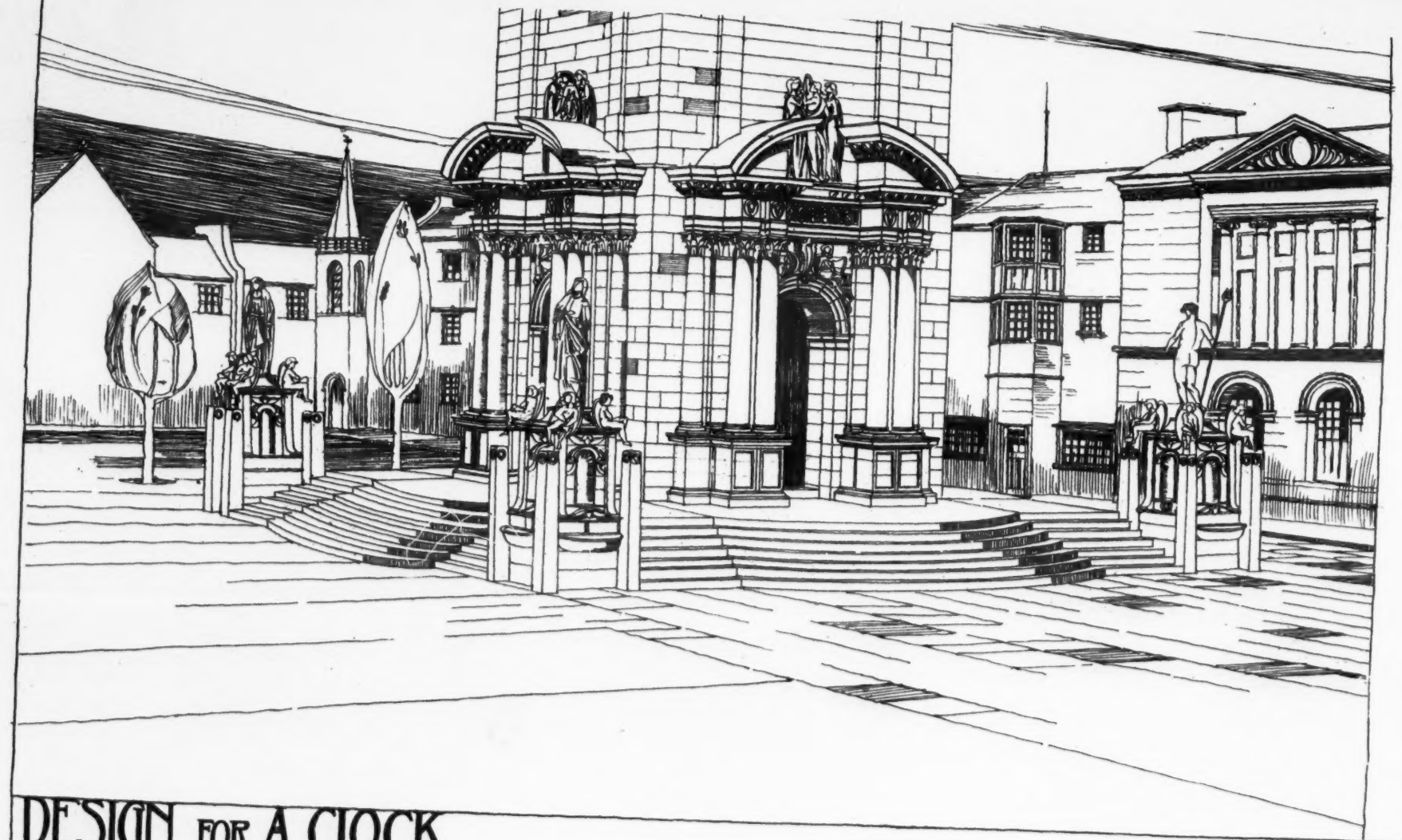
ROUSE'S PRACTICAL MAN. By Ernest E. H. Birch. Seventeenth Edition. (Sweet & Maxwell.)

ELECTRICAL TRADES DIRECTORY AND HANDBOOK FOR 1900. (*The Electrician* Publishing Co.)

THE "PRACTICAL ENGINEER" ELECTRICAL POCKET-BOOK : 1900. (John Heywood.)

THE SOCIETY OF DESIGNERS.—On Tuesday evening the Society held a meeting at which Mr. W. G. Paulson Townsend, design-master, Royal School of Art Needlework, gave a lecture entitled "Design for Embroidery." The lecturer prefaced his remarks with an appropriate sketch of the history and antiquity of embroidery, showing it to be the picture history of ancient civilisations recording mythology, dress, manners, and customs. The chief interest of the evening centred in examples of historical needlework and in the lantern-slides that were shown, the lecturer calling attention to the methods employed and criticising the design of each. It would have been interesting to hear something on the preparation of designs for embroidery, which seems to us to be the weak point of modern needlework. There is a great deal of earnestness in the desire to return again to the best traditions of this particular art, and it was for this purpose that the Royal School of Art Needlework was founded. The schools are the place to learn the business in hand ; there a knowledge is gained of stitches, of the most permanent materials and colours, and of the methods of the old workmen. The weakness of the system seems to lie in the tendency to slavishly imitate the results of the past instead of using the knowledge obtained at the schools as an assistance in interpreting Nature first hand.

GODOLPHIN SCHOOL, HAMMERSMITH.—Proposals have been made for the removal of the school into the country, or the environs of London, and for the disposal of the site for purposes of the projected West London Polytechnic Institute. The school buildings were erected forty years ago, after C. H. Cooke's plans and designs, and are described and illustrated in the *Builder* of August 10, 1861.

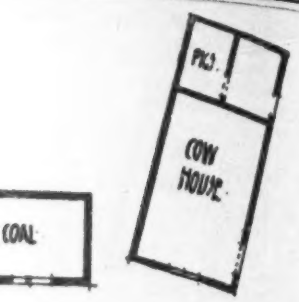


DESIGN FOR A CLOCK TOWER IN A SQUARE
PERSPECTIVE VIEW.

'OXON'

PHOTO-LITHO SPRAGUE & Co LTD 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

DESIGN SUBMITTED FOR THE TITE PRIZE.—By Mr. D. McKay Stoddart.




IFIELD WOOD SUSSEX.
GROUND PLAN OF OLD BUILDING

5. 10. 15. 20 25 30 FEET.

decayed that it was very doubtful it could be kept standing at all, or ade weather-proof; but the attempt de, and it succeeded.

ground story was not more than high—an additional foot or 15 in. was by sinking the floor and underpinning s; and a new wing was added. The cture was retained almost entirely, the tiling being undisturbed, and the roofs laid with old tiles on a concrete bed over the existing spars.

ew porch, with a bath-room over, and rcase adjoining, were built on part of of a lean-to kitchen which was removed. dens round the house were newly laid site drained, and new stables built.

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THOMAS E. PRYCE.

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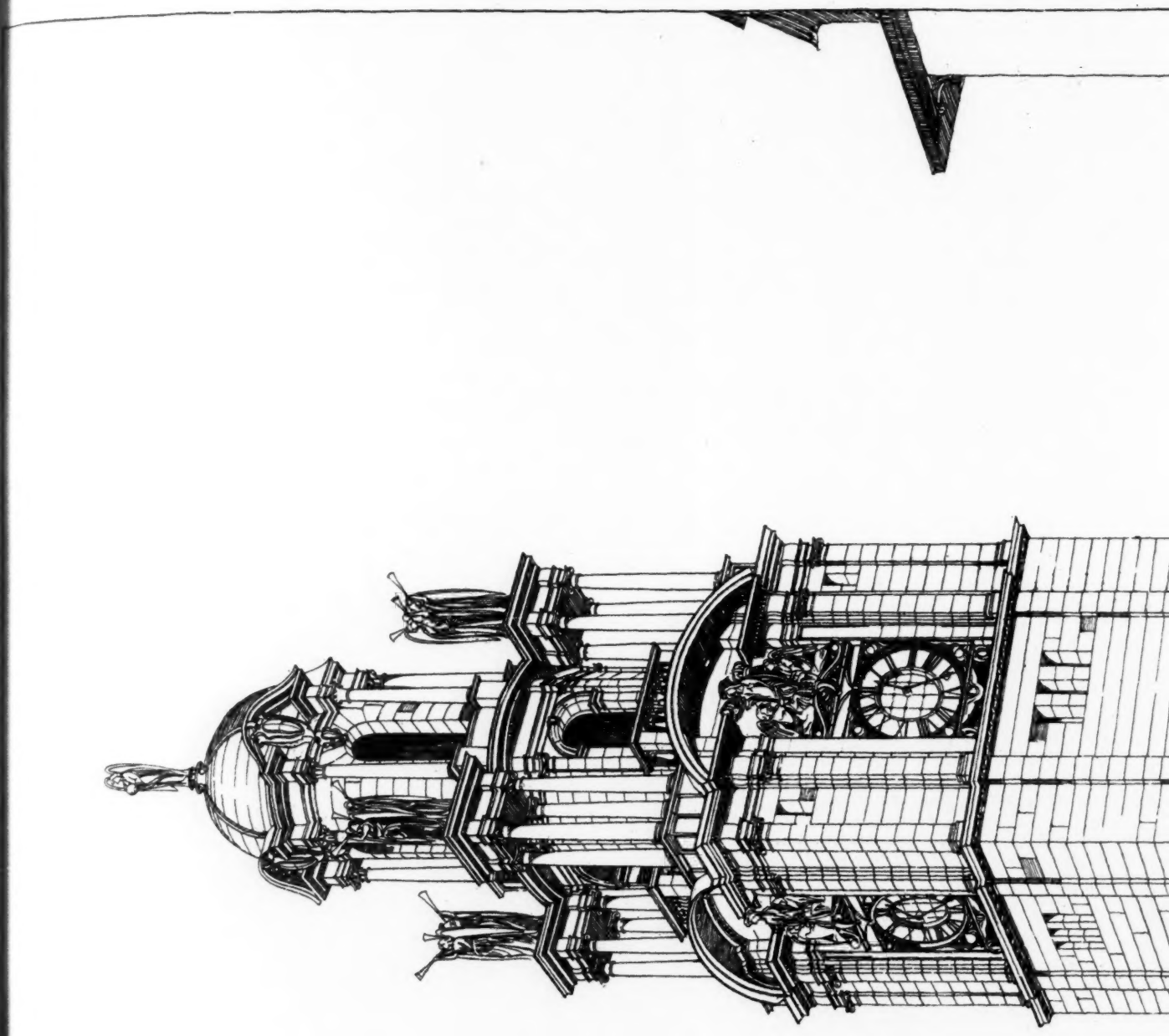

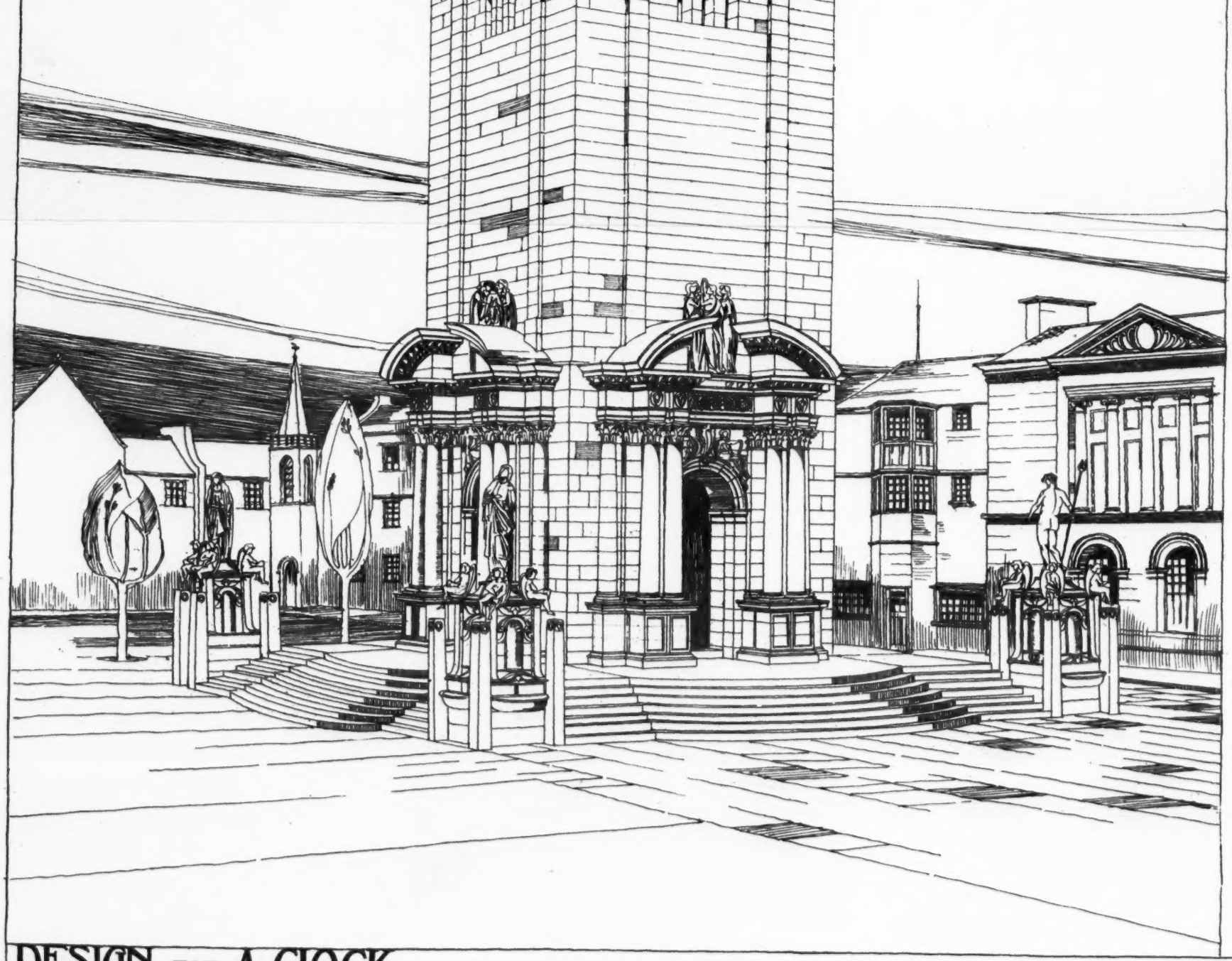

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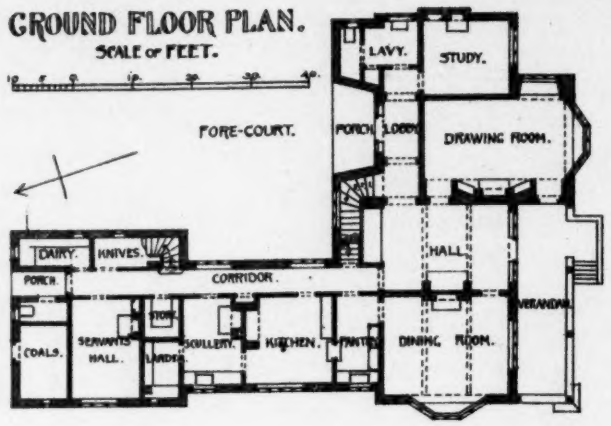


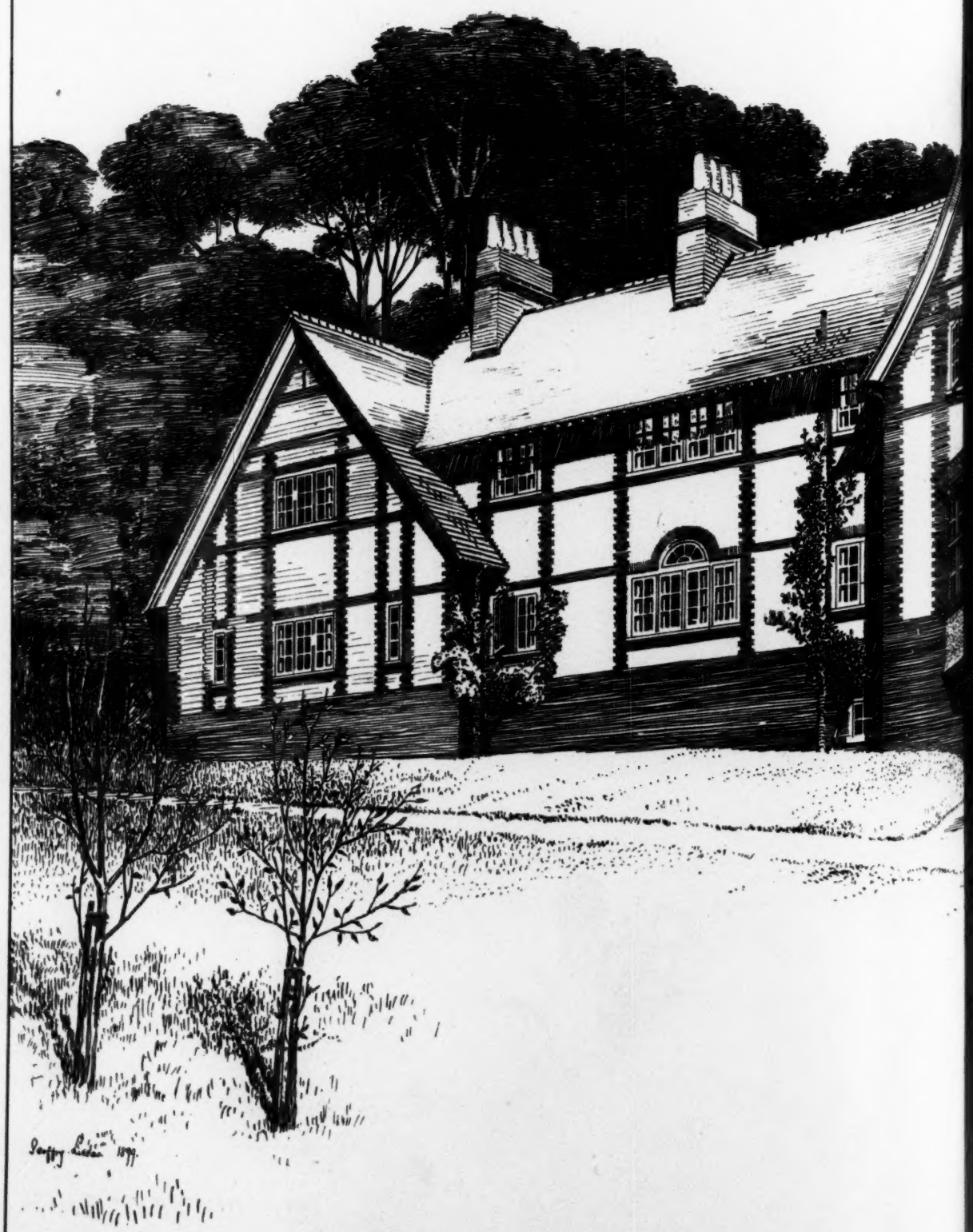

Geoffry Lucas 1899.

ENTRANCE FRONT.

# COLD ASH,
## NEAR NEWBURY.

LEONARD STOKES.

3, PRINCES' STREET, S.W.

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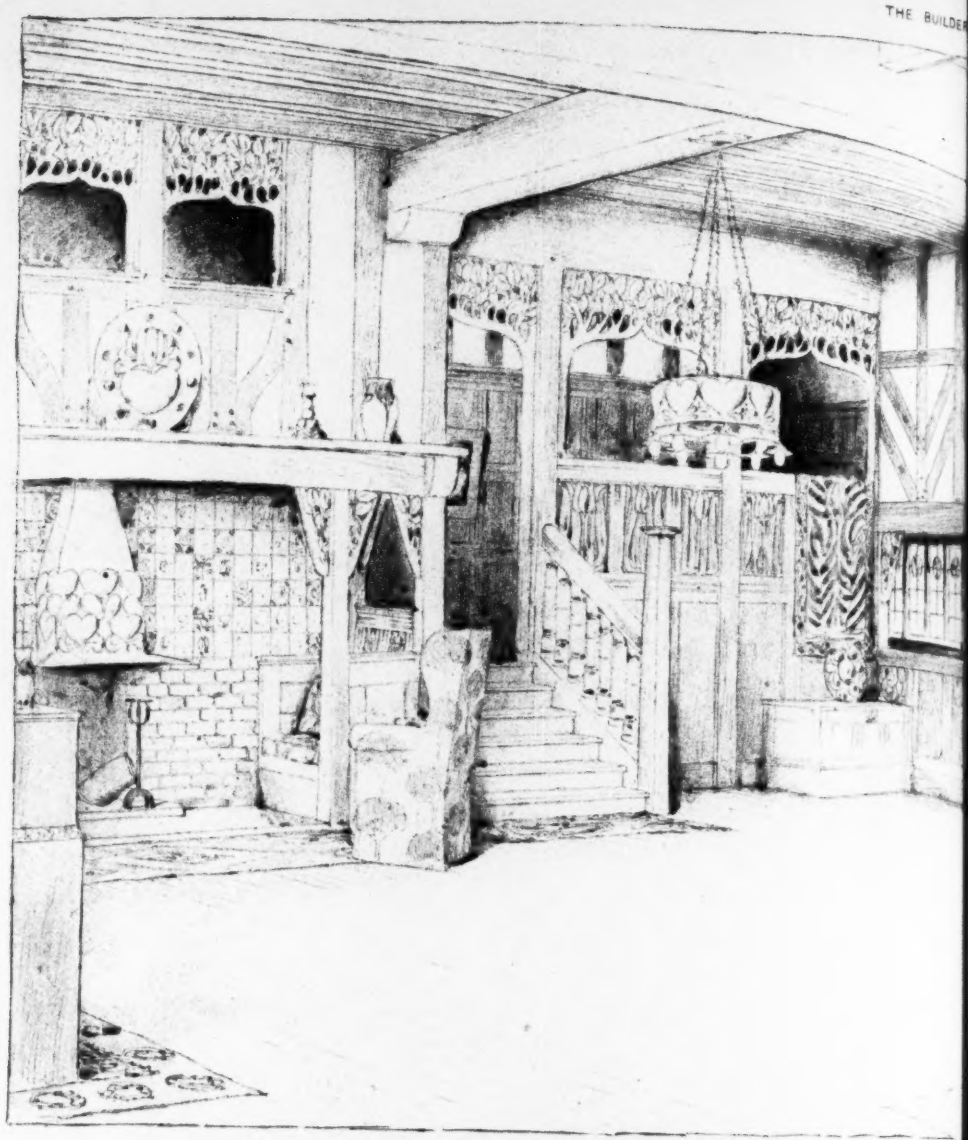
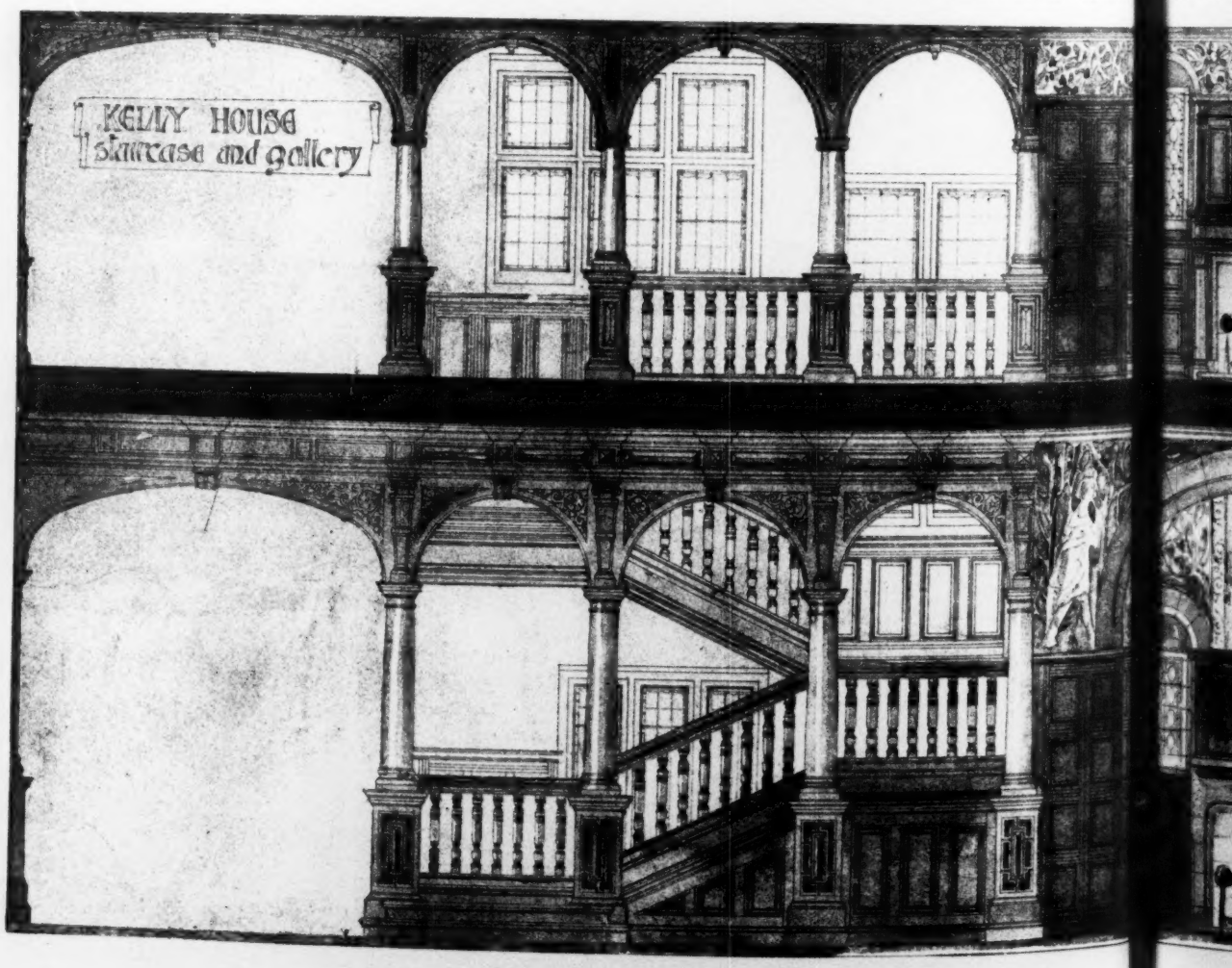
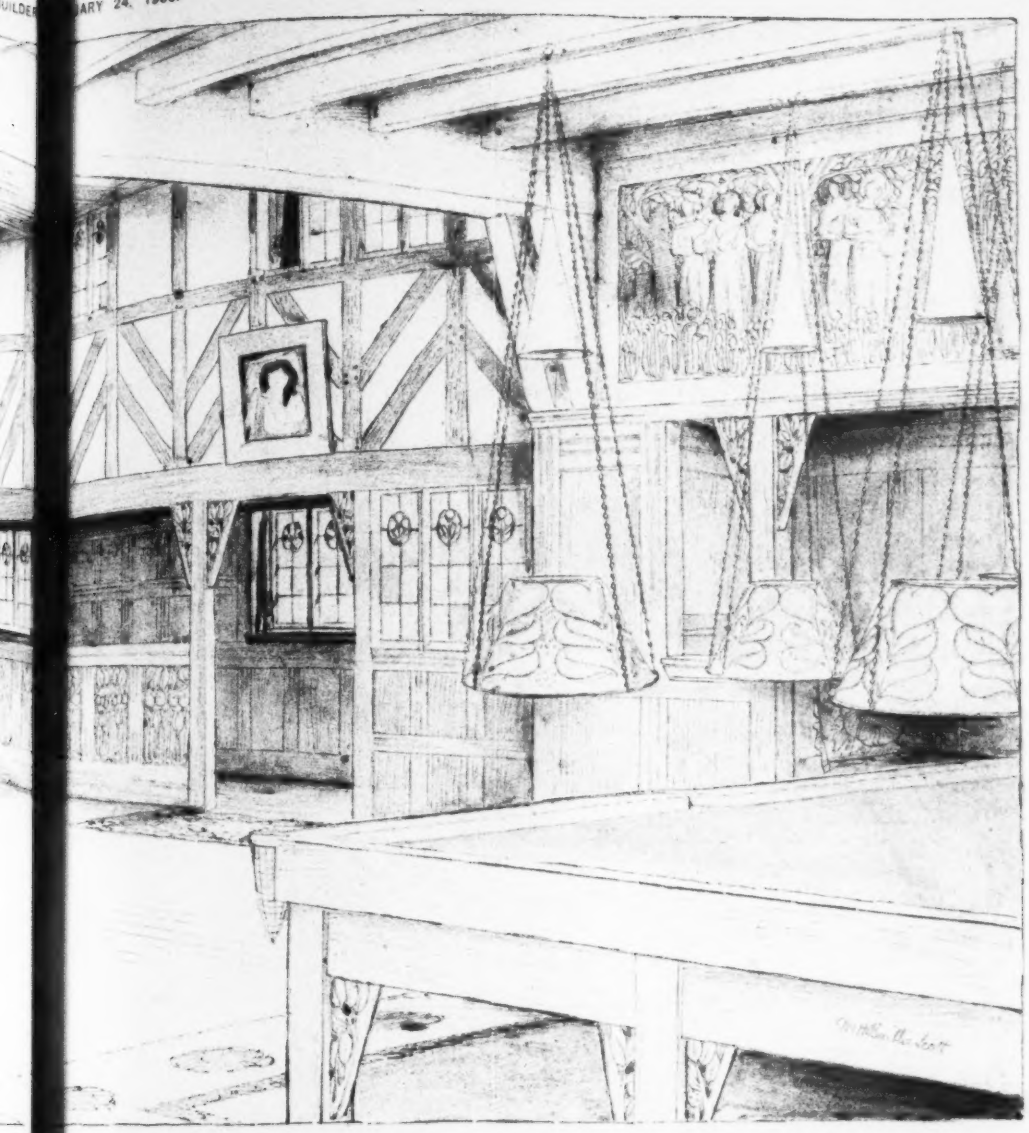


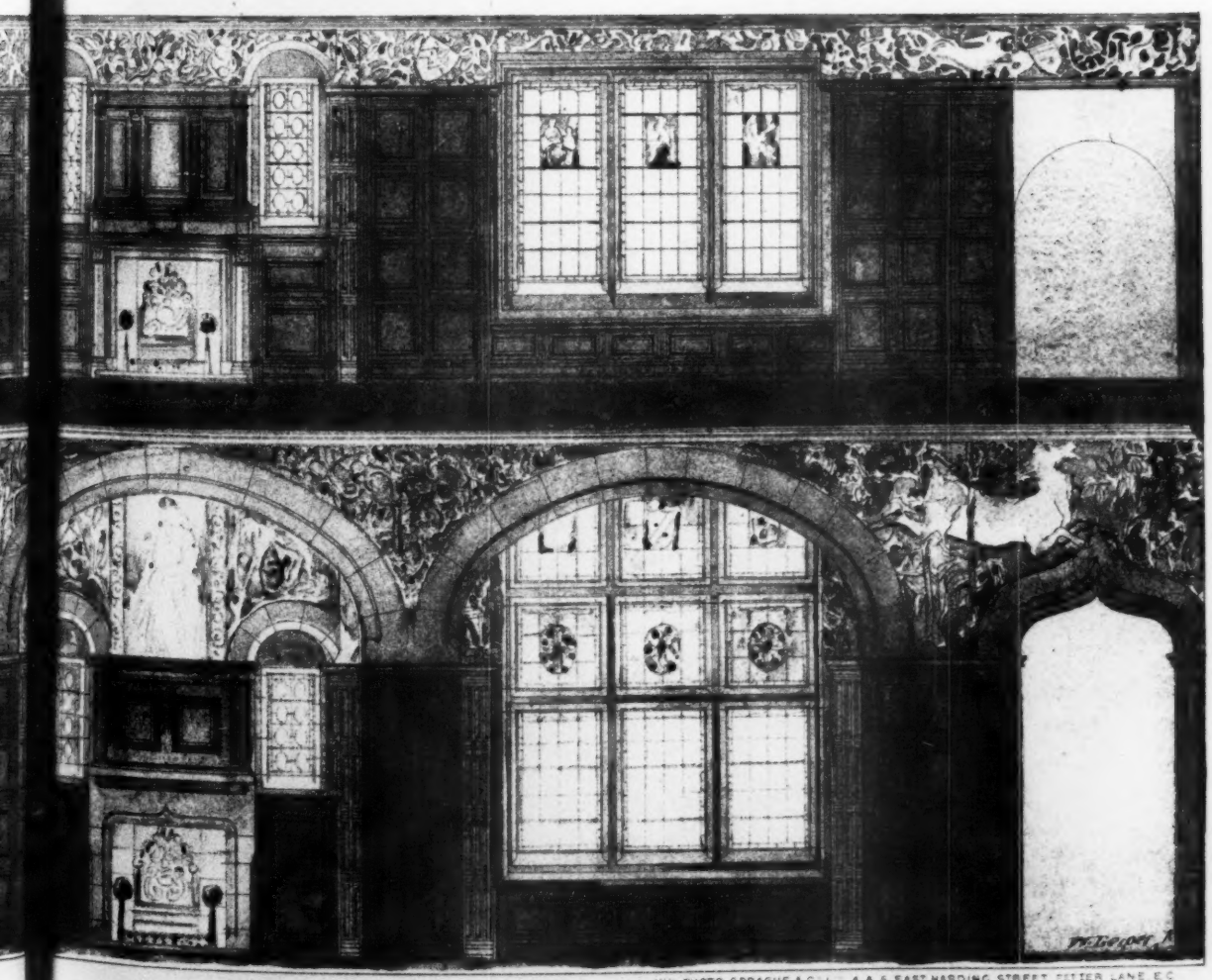
HOUSE AT WINDERMERE: THE HALL.—MR. M.




STAIRCASE AND GALLERY, KELLY HOUSE.—MR. W

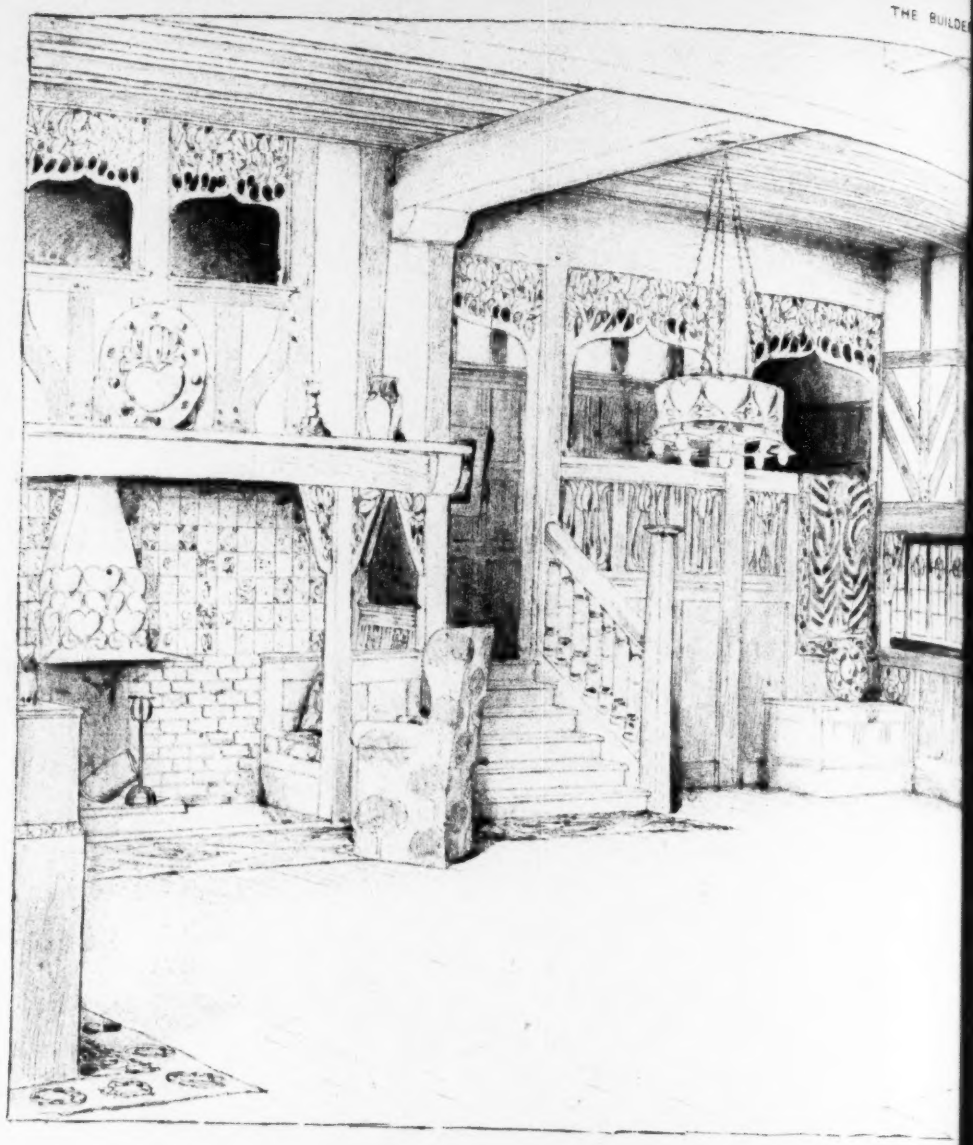


Mr M. H. Baillie Scott, Architect.

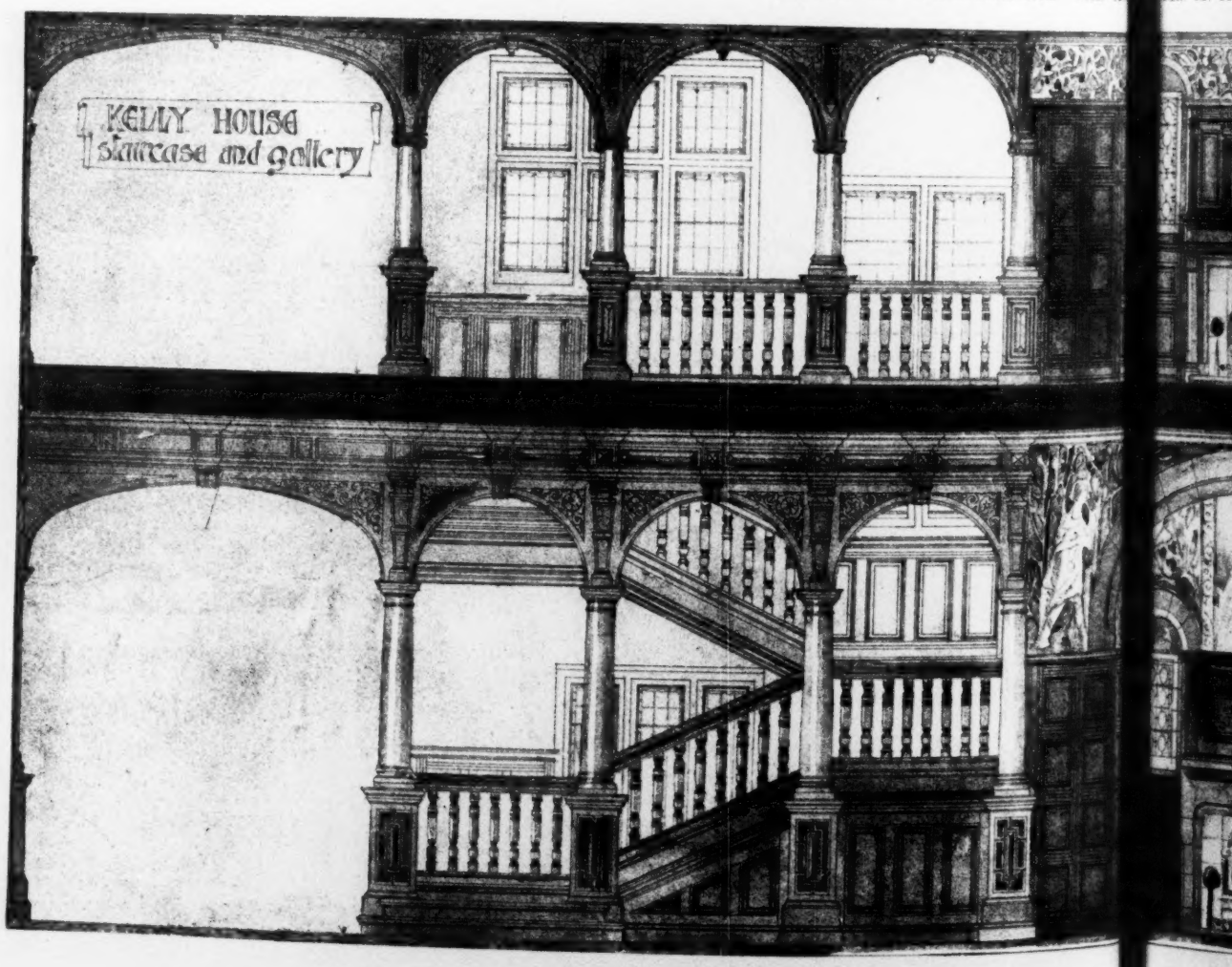


INK-PHOTO SPRAGUE & CO LTD 4 & 5 EAST HARDING STREET FETTER LANE E.C.

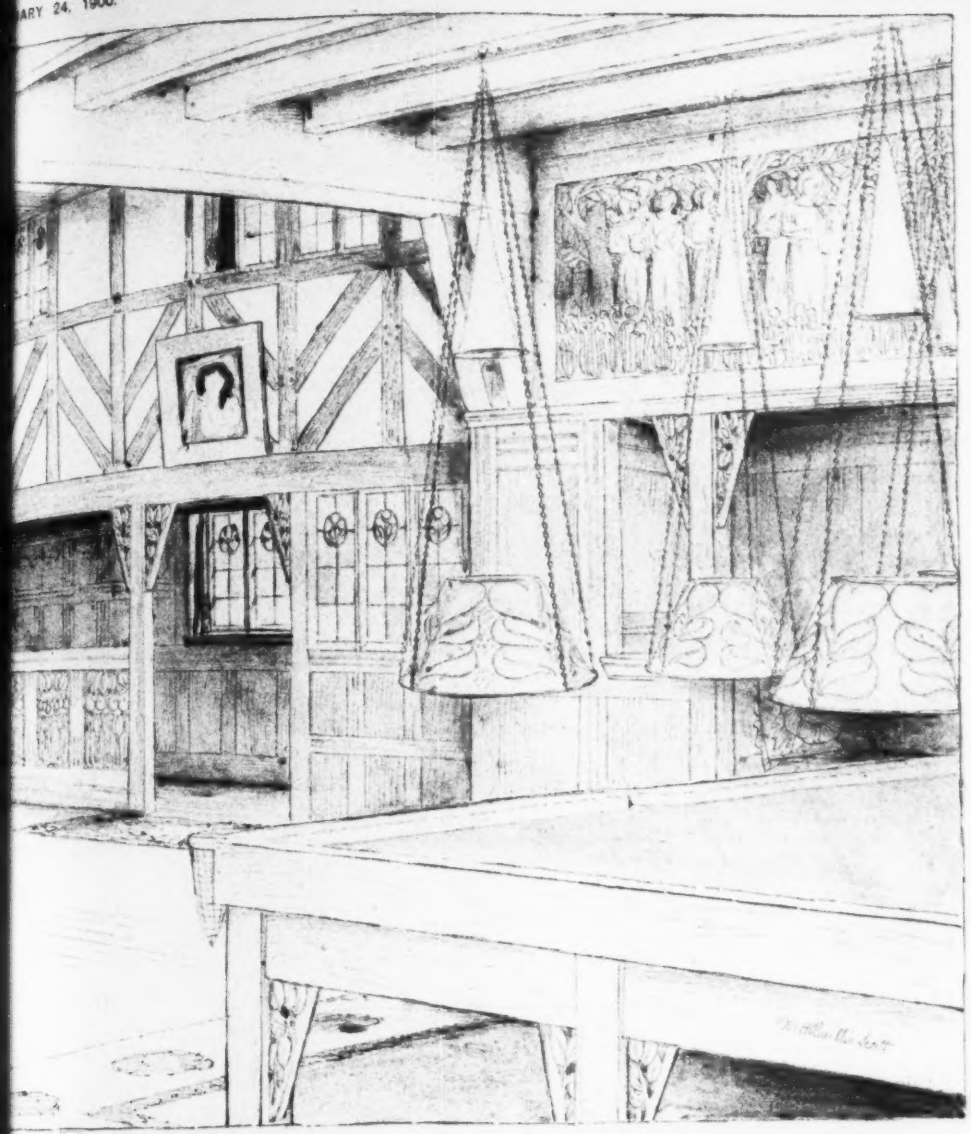
E.—Mr W. Leiper, F.R.I.B.A., Architect.



HOUSE AT WINDERMERE. THE H... MR. M. H...




STAIRCASE AND GALLERY, KELLY H... E.—MR. W...



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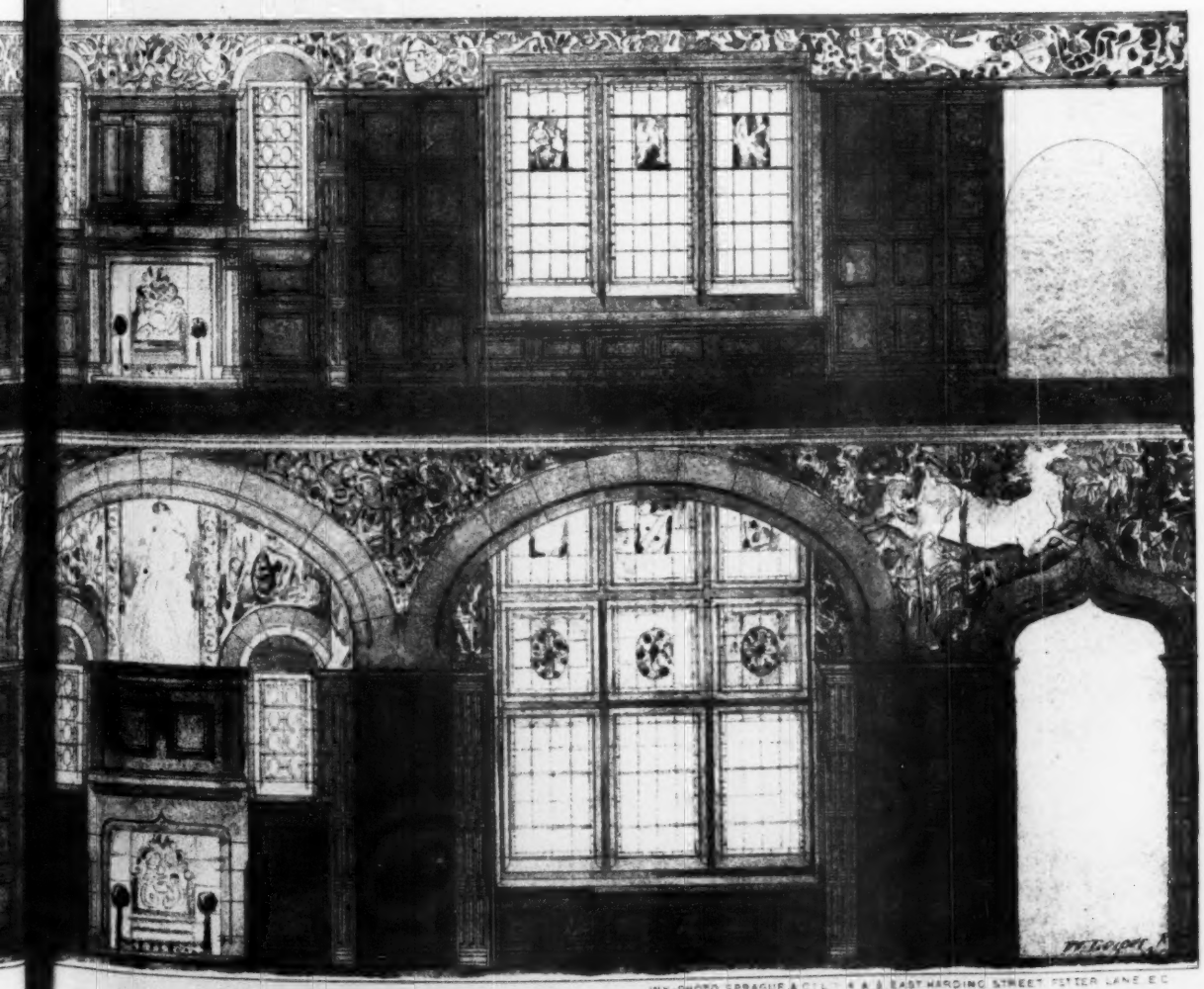

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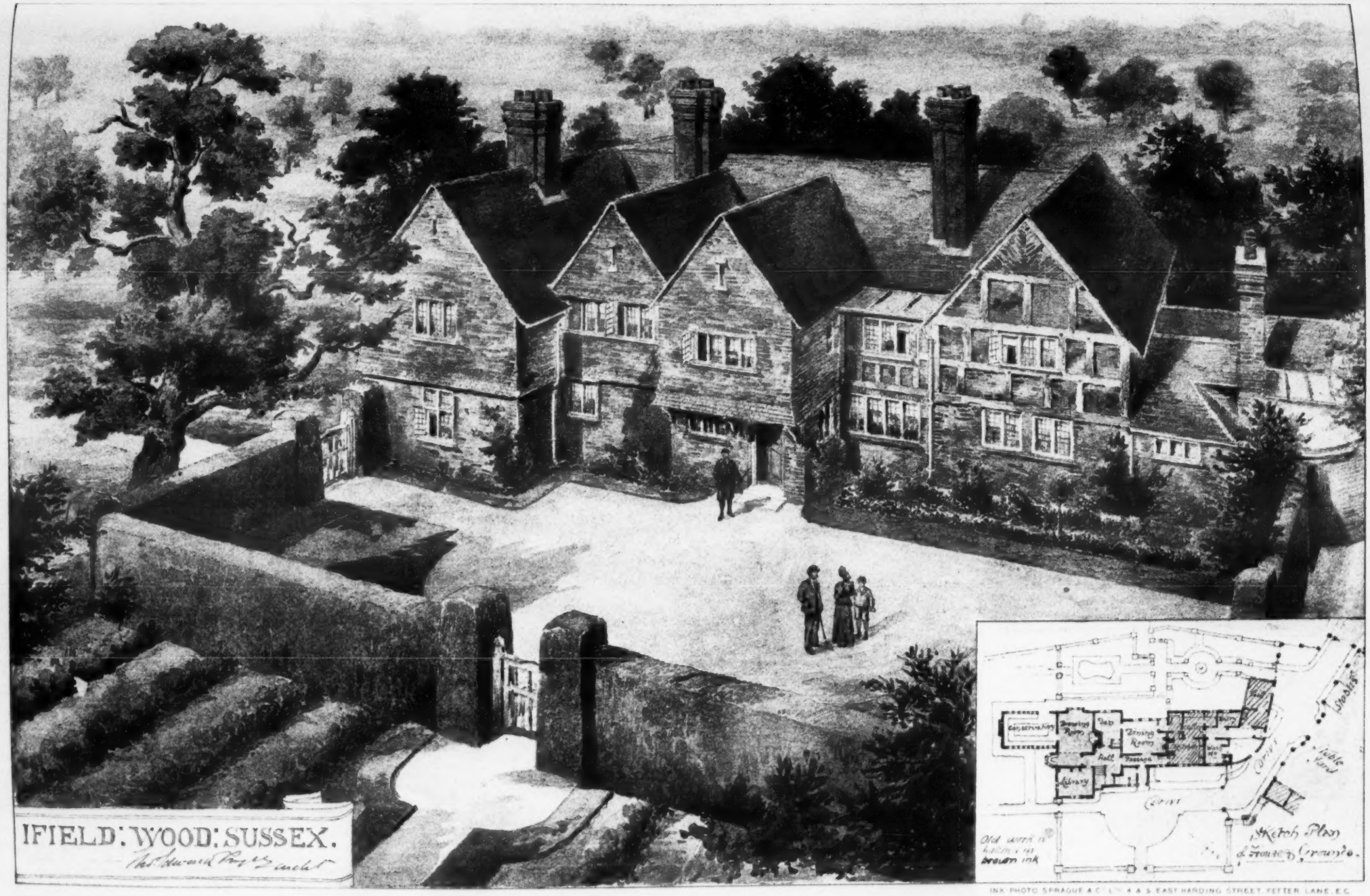
E.—Mr. W. Leiper, F.R.I.B.A., Architect.

INS. PHOTO SPRAGUE & C° LTD. 4 & 5 EASTHARDING STREET FETTER LANE E.C.

A GROUP OF COTTAGES, PORT SUNLIGHT, CHESHIRE.—MESSRS. WILSON & TALBOT, ARCHITECTS.

A GROUP OF COTTAGES, PORT SUNLIGHT, CHESHIRE. MESSRS. WILSON & TALBOT, ARCHITECTS.

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# The Student's Column.

## DETAILS OF STRUCTURAL IRON AND STEEL.

### 7.—STRENGTH OF CAST IRON.

UNDOUBTEDLY the most useful tests of cast iron for structural work are those showing its tensile strength. When very careful examination is desired, the test specimens ought to be cast upon the castings themselves, so that they may be broken off and shaped for the testing machine. The average tensile strength of cast iron is about eight tons per square inch, and is in no way decreased by removal of the skin.

The resistance of cast iron to compressive stress diminishes as the excess of height over sectional area is increased, but strength may be taken as being fairly uniform for any given quality when the height is between one and three times the area. The average compressive strength of cast iron is between thirty-eight and fifty tons per square inch.

A very convenient and easily applied test for cast iron consists in placing a bar of the material on two supports a certain distance apart, and loading it at the centre with gradually increasing weights. Tensile and compressive stresses then result partly from the external load and partly from the weight of the material itself, and mechanical principles are also involved which need not be considered now, as at present our attention is confined to comparative records of strength. In the annexed table the breaking weights for bars of various dimensions and the corresponding co-efficients of transverse rupture have been calculated by the rule $f = \frac{3}{2} \times \frac{Wl}{bd^2}$

*Table VI.—Transverse Strength of Cast Iron.*

| Authority. | Dimensions in Inches. | Centre Breaking Weight in Tons. | Co-efficient of Rupture f). |
|---|---|---|---|
| | *l. b. d.* | | |
| Hodgkinson | 54 × 1 × 1 | ·219 | 17·71 |
| | 54 × 1 × 3 | 1·736 | 15·62 |
| | 54 × 1 × 4 | 4·600 | 23·28 |
| Barlow ..... | 60 × 1 × 1 | ·228 | 20·3 |
| | 60 × 2 × 2 | 1·550 | 17·36 |
| Clark ..... | 54 × 1 × 1 | ·252 | 20·41 |
| | 27 × 3 × 1 | 1·376 | 18·58 |
| | 54 × 3 × 2 | 2·410 | 16·26 |
| Millar..... | 36 × 1 × 2 | 1·670 | 19·33 |
| | 36 × 1 × 1 | ·358 | 22·54 |

Very little information is available with regard to the resistance of cast iron to shearing, and it is not easy to ensure uniform distribution of stress on the section during tests. Shearing strength varies from 6 to 13 tons per square inch.

*Table VII.—Elastic Properties of Cast Iron in Tension.*

| Stress in Tons per sq. in. | Extension per Ton per Unit Length. | Set per Ton per Unit Length. | Co-efficient of Elasticity (E). |
|---|---|---|---|
| 1 | ·000163 | ·0000048 | 6122 |
| 2 | ·000174 | ·0000082 | 5742 |
| 3 | ·000182 | ·0000118 | 5487 |
| 4 | ·000194 | ·0000156 | 5148 |
| 5 | ·000205 | ·0000202 | 4870 |
| 6 | ·000223 | ·0000268 | 4470 |
| 6·5 | ·000233 | ·0000300 | 4283 |

*Table VIII.—Elastic Properties of Cast Iron in Compression.*

| Stress in Tons per sq. in. | Compression per Ton per Unit Length. | Set per Ton per Unit Length. | Co-efficient of Elasticity (E). |
|---|---|---|---|
| 1 | ·000167 | ·0000047 | 6000 |
| 2 | ·000173 | ·0000106 | 5768 |
| 3 | ·000178 | ·0000129 | 5625 |
| 4 | ·000179 | ·0000145 | 5580 |
| 5 | ·000180 | ·0000159 | 5545 |
| 6 | ·000182 | ·0000175 | 5496 |
| 7 | ·000184 | ·0000187 | 5439 |

The foregoing tables are calculated from Hodgkinson's experimental results obtained by testing bars of cast iron 10 ft. long by 1 in. square, and from them it will be seen that cast iron has no definite elastic limit, as a perceptible permanent deformation is caused with comparatively small loads, and the set increases regularly with every addition to the load up to the breaking-point. The extent to which *elastic strain* takes place may be found by deducting set from extension or compression. Professor Unwin suggests the use of a co-efficient (E′), calculated from the elastic extension, and the modulus so obtained will be found much less variable than (E) which is ordinarily employed.

### STRENGH OF MALLEABLE CAST IRON.

Published tests relative to malleable cast iron are somewhat divergent in their nature, probably owing to differences of form and quality. The undermentioned data are therefore only useful for general guidance :—

*Table IX.—Strength of Malleable Cast Iron.*

| | |
|---|---|
| Tensile strength ..... | 14 to 17 |
| Compressive strength..... | 48 „ 70 |
| Elongation per cent. in 8 in. | 1 „ 5 |
| Elastic limit ..... | 1 „ 4 |

### STRENGTH OF WROUGHT IRON.

For structural work, wrought iron is comparatively little used, although for some special purposes it is preferred to steel. From experimental records bearing on the question of strength we have selected only such as may serve to illustrate characteristics which ought not to escape attention, and which, for the sake of clearness, will be dealt with under separate headings.

*Tensile Strength.*

*Table X.—Tensile Strength of Various Kinds of Wrought Iron (Styffe).*

| Material. | Percentage of Carbon. | Ultimate Strength. | Contraction of Area per Cent. | Elongation per Cent. in 5 ft |
|---|---|---|---|---|
| Lowmoor iron..... | 1·21 | 24·73 | 53 | 19·6 |
| Cleveland..... | ·07 | 26·81 | 42 | 17·3 |
| Rolled charcoal iron | ·12 | 26·74 | 16 | 7·2 |
| „ „ „ | ·07 | 22·67 | 65 | 18·4 |
| Swedish iron ..... | ·07 | 20·92 | 70 | 21·1 |

*Table XI.—Average Strength of Structural Wrought Iron.*

| Material. | Ultimate Strength in Tons per sq. in. | Contraction of Area per Cent. |
|---|---|---|
| Plates ..... | 18 to 22 | 7 to 10 |
| Angles, &c.... | 20 „ 23 | 12 „ 16 |
| Bars, flat..... | 21 „ 24 | 18 „ 22 |
| „ round | 19 „ 22 | 13 „ 18 |
| Rivet iron ... | 23 „ 25 | 30 „ 40 |

*Compressive Strength.*—Wrought iron used in structures seldom fails under compressive stress from insufficiency of strength, but rather from want of proper stiffening. The average strength of wrought iron to resist compression has been found experimentally to be from 16 to 20 tons per square inch.

*Shearing Strength.*—According to data furnished by tests made on behalf of the United States Navy, the shearing strength of wrought iron should not to be taken at more than 80 per cent. of the ultimate tensile strength, and for ordinary brands 75 per cent. is a safer estimate.

*Elastic Strength.*—The co-efficient of elasticity for wrought iron is naturally a movable quantity, some of the most reliable values of which are summarised below :—

*Table XII.—Co-efficient of Direct Elasticity.*

| Material. | Co-efficient E in Tons per square inch. | Authority. |
|---|---|---|
| Iron plate (longitudinal) | 11,200 | Kupffer |
| „ (transverse) | 12,160 | „ |
| Rolled bar iron (English) ..... | 12,850 | „ |
| Lowmoor iron ..... | 14,280 | Styffe |
| Dudley „ ..... | 12,260 | „ |
| „ „ ..... | 12,680 | „ |
| Bar iron (medium quality) ..... | 10,000 | Barlow |

As before explained, the elastic limit o wrought iron varies with successive loading and with the manner in which the loads are imposed. The averaged result in the following table will afford some indication as to the co-effiicent which may safely be used for purposes of calculation.

*Table XIII.—Elastic Limits of Wrought Iron.*

| Material. | Elastic Limit tons per square inch. | Authority. |
|---|---|---|
| Yorkshire bar iron. | 13·0 | Steel Committee |
| S. C. Crown ..... | 11·8 | — |
| Swedish ..... | 11·05 | Kirkaldy |
| Yorkshire plate ... | 12·2 | — |
| Bar iron (medium). | 10·0 | Barlow |

### STRENGTH OF STEEL.

Mild steel used in constructional work is about 50 per cent. stronger than wrought iron. It is proportionately superior in elastic strength and ductility, and is much more uniform in quality. The following tables, compiled from the various data available, will sufficiently demonstrate the chief characteristics of structural steel :—

*Table XIV.—Mechanical Properties of Steel (Bauschinger).*

| Carbon per cent. | Elastic Limit, tons, per sq. in. | Tensile strength, tons per sq. in. | Elongation per cent. in 2-in. length. | Contraction per cent. of area. |
|---|---|---|---|---|
| ·19 | 21·02 | 30·4 | 20·1 | 41·7 |
| ·46 | 21·90 | 33·8 | 18·1 | 30·5 |
| ·57 | 21·02 | 35·6 | 18·4 | 30·7 |
| ·78 | 23·80 | 41·1 | 11·4 | 19·1 |
| ·87 | 27·24 | 46·7 | 8·1 | 16·5 |
| ·96 | 30·90 | 52·7 | 6·6 | 10·0 |

*Table XV.—Co-Efficients of Elasticity (Bauschinger).*

| Co-Efficient E. | | | | Co-Efficient C. | Poisson's Ratio. |
|---|---|---|---|---|---|
| Carbon per cent. | Tension tests. | Pressure tests. | Bending tests. | Torsion tests. | $\sigma = \frac{E}{2C} - 1$ |
| 0·19 | 13,780 | 16,540 | 13,020 | 5,575 | ·32 |
| 0·46 | 14,300 | 14,640 | 13,090 | 5,420 | ·30 |
| 0·57 | 13,720 | 14,290 | 13,080 | 5,320 | ·30 |
| 0·78 | 14,980 | 14,480 | 13,460 | 5,405 | ·34 |
| 0·87 | 13,880 | 14,100 | 13,590 | 5,400 | ·29 |
| 0·96 | 13,820 | 14,640 | 13,080 | 5,560 | ·26 |

For the purpose of indicating more precisely the qualities of steel which are most suitable for the architect, some of the requirements of Government and other specifications are quoted below in tabular form :—

*Table XVI.—Standards for Mild Steel.*

| Name. | Tensile Strength per sq. in. | Elongation in 8 in. length. |
|---|---|---|
| British Admiralty... | 26 to 30 tons | 20 per cent. |
| French Admiralty... | 28 to 28·5 „ | 20 „ |
| Board of Trade..... | 26 to 32 „ | 20 (in 10 in.) |
| Lloyd's ..... | 27 to 31 „ | 20 per cent. |
| Lancashire & Yorkshire Railway ... | 26 to — „ | 20 „ |

As a general rule, rolled steel joists, angles, and bars ought to exhibit characteristics such as the following : tensile strength, 30 tons ; elastic limit, 18 to 20 tons ; co-efficient of elasticity (E.), 13,000 tons ; elongation about 20 per cent., and contraction of area from 30 to 40 per cent.

### STRENGTH OF STEEL CASTINGS.

As steel castings are now frequently employed in place of cast iron, malleable cast iron and sometimes of wrought iron, it may be useful to state the average measurements of strength deducible from various experiments. Ultimate tensile strength may be anything between 15 and 45 tons per square inch, and, other things being equal, 20 tons is probably a safe average. The mean elastic limit is about 13 tons, but it will be safer to assume this quantity a little lower. The mean co-efficient of elasticity (E) is about 10,000 tons. Owing to the fact that the melting point of steel (3,500 deg. Fahr.) is considerably higher than that of cast iron, greater contraction takes place

in the foundry, consequently steel castings should always be annealed for a period of about twenty-four hours at a temperature of about 1,700 deg. Fahr. Annealing somewhat reduces tensile strength, but largely increases ductility, and, for the reasons previously stated, removes internal stress.

### OTHER NOTES UPON IRON AND STEEL.

*Strength as Affected by Rolling.*—The ratio existing between the area of a finished bar and the area of the pile from which it was rolled exercises influence upon tenacity and elastic limit; and the temperature at which rolling is conducted has a similar effect. These phenomena are evidenced by the tables given below.

*Table XVII.—Effect of Reducing Iron Bars by Rolling (United States Testing Board).*

| Diam. | Area of Bar (Area of Pile = 100). | Tensile Strength, Tons per sq. in. | | Elastic Limit, Tons per sq. in. | |
|---|---|---|---|---|---|
| | | Rough Bar. | Turned Bar. | Rough Bar. | Turned Bar. |
| 2½ | 6·1 | 21·1 | 21·1 | 13·25 | 13·3 |
| 2 | 4·4 | 21·4 | 21·6 | 16·0 | 14·2 |
| 1½ | 4·9 | 22·7 | 23·1 | 15·6 | 16·3 |
| 1 | 3·1 | 23·1 | 22·8 | 17·4 | 17·2 |

*Table XVIII.—Effects of Cold Rolling.*

| Material. | Elastic limit. | Tensile strength. | Elongation. |
|---|---|---|---|
| Iron plate | 14·48 | 23·75 | 15·0 |
| " " cold rolled | 26·42 | 29·78 | 7·0 |
| Dudley bar iron | — | 26·0 | 20·3 |
| " " cold rolled | — | 38·4 | 8·0 |
| Mild steel | 18·80 | 33·34 | 18·0 |
| " " cold rolled | 26·92 | 34·61 | 11·5 |

*Strength as Affected by Re-rolling.*—If experimental results are to be accepted as establishing a general rule, repeated rolling improves the quality of wrought iron up to a certain point, beyond which, however, injury ensues, as shown below :—

*Table XIX.—Effect of Repeated Rolling.*

| Times Worked. | Tensile Strength, tons per sq. in. | | Authorities. | |
|---|---|---|---|---|
| | (a) | (b) | (a) | (b) |
| One | — | 19·6 | — | Clay |
| Two | 22·38 | 23·5 | Clark | " |
| Three | 25·60 | 26·6 | " | " |
| Four | 25·97 | — | " | — |
| Five | 26·65 | — | " | — |
| Six | — | 27·5 | — | Clay |
| Nine | — | 26·0 | — | " |
| Twelve | — | 19·6 | — | " |

*Strength as affected by Removal of Skin.*—By Table XVII. it will be seen that turning is in no way prejudicial to tensile or to elastic strength.

*Strength as affected by Hammering.*—As a general rule it may be taken that the effect of hammering or forging ductile materials such as wrought iron and steel, at temperature below that of plasticity, is to increase ultimate strength and to reduce ductility proportionately.

*Strength as affected by Re-heating.*—The effect of re-heating, or annealing, wrought iron and steel is to reduce tensile strength whilst increasing ductility. Annealing removes the effects of over-strain, and causes the metal to revert to its natural condition. Consequently, ironwork in a building is not necessarily injured by exposure to fire; on the contrary, it may be improved in quality, if originally rolled at too low a temperature, or if subsequently over-strained.

*Strength at Various Temperatures.*—Very little diminution of strength is experienced by wrought iron and steel when subjected to low temperatures; in fact, some experiments indicate improvement at −2 deg. Fahr. With regard to abnormally high temperatures, some investigators consider that wrought iron exhibits increase of strength up to about 400 deg. or 500 deg. Fahr., but this conclusion is not entirely in accordance with the following data :—

*Table XX.—Effect of Temperature on Strength. (Normal Strength = 100.)*

| Temperature. | Wrought Iron (Roelker). | Bessemer Steel (Roelker). | Wrought Iron (Franklin Institute). |
|---|---|---|---|
| 0 deg. F. | 100 | 100 | 96 |
| 100 " | 100 | 100 | 102 |
| 300 " | 98·5 | 100 | 106 |
| 500 " | 95·5 | 98·5 | 104 |
| 700 " | 85·7 | 68 | 92·5 |
| 1,000 " | 31·0 | 31 | 36 |
| 1,500 " | 12·7 | 12 | — |
| 2,000 " | 4·2 | 5 | — |

*Strength in Resisting Sudden Stress.*—Comparatively few records are available as to this point, but the average results obtained by Mr. Kirkaldy with regard to wrought iron indicate a difference of about 18 per cent. diminution of tensile strength under a suddenly applied load, and a similar decrease of elongation.

*Strength as affected by Galvanising.*—Experiments made upon wrought-iron plates appear to show no perceptible difference in any way between galvanised and ungalvanised plates, but there is a popular impression that the process of galvanising is not calculated to improve the quality of either iron or steel, and no possible harm can result from the use of a somewhat more liberal factor of safety when calculating the strength of material so treated.

*Table XXI.—Comparative Values of the Elastic Constants (Unwin).*

| Material. | E | C | K | σ |
|---|---|---|---|---|
| Cast iron | 6,250-10,220 | 3,378 | 6,123 | ·270 |
| Wrought iron | 12,470 | 4,883 | 9,245 | ·278 |
| Steel | 13,820-15,560 | 5,200 | 11,690 | ·303 |

## OBITUARY.

MR. H. HUXHAM.—The death is announced of Mr. Hortensius Huxham, C.E., of Swansea. Mr. Huxham was a member of the Institution of Civil Engineers, and was for many years secretary of the South Wales Institute of Engineers.

MR. J. E. THOMAS, C.E.—The death occurred on the 16th inst. of Mr. John Edmund Thomas, civil engineer, of Wrexham. Mr. Thomas was for a time Sanitary Inspector to the Cardiff Rural Sanitary Authority, and he was engaged for three years by the Borough of Aberystwyth upon works in connexion with the water supply of that town. He was fifty-nine years of age.

## GENERAL BUILDING NEWS.

BIRKENHEAD SCHOOL BOARD. — At the last meeting of this Board, Mr. T. W. Cubbon, of Birkenhead and Manchester, was appointed architect for a Central Hall Board School, to be erected at Rock Ferry. The buildings will include laundry and manual departments and caretaker's house. At the same meeting, Mr. Cubbon was instructed to prepare designs for a block of buildings to be erected on a site the cost of which was over 6,000*l*. The buildings will consist of pupil teachers' centre, central assembly hall, chemical and physical laboratories, gymnasium, art school, library, and caretaker's residence. It is also intended to erect a higher grade and technical school in connexion with these buildings.

RE-BUILDING IN DAWSON-STREET, DUBLIN.—No. 56, Dawson-street is being re-built by the firm of Messrs. Millar & Beatty, Limited. The building work is being carried out by Messrs. S. H. Bolton & Sons, under the direction of Sir Thomas Deane & Sons, architects.

BANK PREMISES, WHITLEY BAY, NORTHUMBERLAND.—A new bank, for Messrs. Barclay & Co., Limited, has been erected at the corner of Esplanade and Whitley-road. The lower part of the building is constructed of red granite and ashlar, while the upper portion is of Ruabon red brick with stone dressings. The fire and burglar proof door of the strong-room was supplied by Messrs. Hobbs, Hart, & Co., Limited. The architect was Mr. Henry Montgomery, of Newcastle; and Mr. W. T. Weir, of Howdon, was the contractor.

NEW COUNTY ASYLUM, CHEDDLETON, STAFFORDSHIRE. — The new county asylum at Cheddleton, designed to accommodate 600 in the first instance—300 males and 300 females—with provision in the plans for convenient extension to 800, has been erected from designs prepared by Messrs. Giles, Gough, & Trollope, of London, whose plans were selected in competition. The County Lunacy Committee adopted approximate estimates for 187,250*l*. in all. Tenders were obtained for the buildings, fittings, and machinery, and ultimately a contract was entered into with Messrs. Brown & Sons for an aggregate sum of 165,115*l*. The original plans having been, from various causes, departed from, the expenditure was in consequence so much increased that last year (1899) it was found necessary to ask the Council for a supplemental vote of 35,000*l*. The blocks of buildings cover eight acres. The drainage system is in three parts—one for the surface water, which will be carried away in the ordinary water-courses; another for rain water, to be collected into a subterranean tank; and the third for the sewage proper, including discharges from water-closets, baths, laundry, sinks, &c., which will be conveyed to tanks for treatment. The rain-water tank is constructed to hold 150,000 gallons of water for laundry and other purposes. Some 18,000,000 bricks were used in the buildings —Wall Grange faced bricks for external work, and for interiors, bricks supplied by Mr. H. Warrington, of Berry Hill. The red sandstone dressings were from the Beggar's Well Quarries, near Alton. The bulk of the woodwork was prepared at the contractors' yards at Salford, and brought to Cheddleton ready for use. The ironwork, consisting principally of columns and girders, was supplied by the firm of Messrs. Hill and Smith, of Brierley Hill. The ceilings on the upper floors are formed of iron girders and concrete. The central or administrative block divides the male side and the female side, each surrounding an open-air court. On the female side, lying to the left of the block, are laundry, wash-houses, and drying courts. On the male side are workshops, consisting of separate rooms for tailors, shoemakers, plumbers, bricklayers, painters, carpenters, bakers, and brushmakers. In the centre of the main block is the dining and recreation hall and theatre, a room 100 ft. by 54 ft. The stage—54 ft. by 25 ft.—and suite of rooms adjoining are so arranged as to be easily accessible from all other parts of the asylum, being flanked by portions of the main corridors on three sides. One of the corridors is 250 yards in length. The kitchens are arranged adjacent to the dining-hall. Here patent steam cooking ranges, tea furnaces, and boiling pans have been put in by Messrs. Newton, Chambers, & Co., of Thorncliffe, Sheffield. For supplying the laundry machinery the tender of Messrs. J. & F. May, of London, was accepted, the amount being 2,050*l*. The washing machinery is by Messrs. Manlove, Alliott, & Co., of Nottingham. The stores are provided with galleries, lift, and cellar. The water supply has been obtained on the site by boring, mostly through the solid rock, to a depth of 100 ft. The boring operations were carried out by the contractors, Messrs. Brown & Sons. Mr. Henry Lea, C.E., of Birmingham, was appointed to advise the committee on electric lighting, steam generation, and other engineering matters. The sub-committee invited tenders from seven firms for electric generating and storage plant, and from four firms for electric wiring and fittings. In the result, the lowest tenders were accepted—viz., that of Messrs. Mavor & Coulson, Limited, of Glasgow; and that of the Walsall Electrical Company, Limited. The engine-room contains two turbo-electric generators, which were supplied by Messrs. C. A. Parsons & Co., Limited, of Newcastle-on-Tyne. An infectious diseases hospital is placed 300 yards distant from the main buildings, on the highest point of the estate. The mortuary is detached from the main buildings. A new church has been erected near the asylum buildings. It is of Gothic design, and is built of red brick and stone, with pitch-pine open roof and fittings. The seating accommodation if for 500. There are five blocks of houses for officers and attendants. The medical superintendent's house forms a separate building, and there is communication between the house and the asylum by means of a covered way constructed of brick and stone. The sub-committee having obtained tenders upon the plans and specifications prepared by Mr. J. E. Willcox, sanitary engineer, of Birmingham, entered into a contract for the execution of works of sewage disposal with Messrs. Brown. The scheme provides for the disposal of the sewage by biological treatment without the use of chemical precipitants; but in order to provide for possible failure, the tanks have been constructed in such a manner as to admit of adaptation to other methods of disposal. As at present arranged, the sewage will be discharged into a preliminary tank, where liquifaction of the suspended solids will take place, the final process of nitrification being brought about by means of coal filters constructed on the lines laid down by Mr. Garfield. The scheme includes an electric tramway, which will form a junction with the North Staffordshire Railway at Leekbrook. Mr. H. T. Pebworth acted as clerk of the works throughout the construction and he has been appointed permanent resident clerk of the works and engineer.

THE INSTITUTE OF SANITARY ENGINEERS (INCORPORATED).—At a meeting of the Election Committee, held on the 14th inst., the following gentlemen were elected, viz. :—Members: P. Baldwin, Wakefield; W. J. Cornwell, Betchworth; T. Fithern, Claremont, S.A.; H. G. Nicholson-Lailey, Caerphilly, Glam.; A. C. Remnant, Catford. Associates: W. J. Collins, Harrow-on-the-Hill; E. W. Norman, Forest Gate; P. J. Roddie, Waterford.

## FOREIGN.

FRANCE.—The Committee of "Vieux Paris" has after all succeeded in inducing M. Cavel to modify his scheme for enlarging the Bourse, and to leave the building architecturally untouched. He now proposes to find the increased space by a large basement under the whole building, lighted from a sunk area round it. The cost is estimated at four million francs.——The seventh exhibition of French Oriental painters is open at the Durand-Ruel Gallery; it includes some interesting scenes in Morocco by M. Montenard. The exhibition of the "Association Artistique" has been opened in the Galerie des Artistes Modernes, Rue Caumartin, including works by MM. Gagliardini, Harpignies, Tanzi, and Guillemet; and the first exhibition of the new "Société des Peintres et Sculpteurs" will open on March 10.——The tunnel formed under the Cours la Reine, for the transport of materials for the Palais des Beaux-Arts, is to be retained permanently after the close of the exhibition, to form a covered gallery decorated with rockeries and flowers.——The municipality of Chalons-sur-Marne has voted a sum of 1,200,000 francs for the rebuilding of the College and the completion of the Museum. —— M. Billaré, Diocesan Architect at Amiens and President of the Société des Architect's du Nord, has died from the effects of a sad accident. In walking on a scaffold about 120 ft. from the ground, erected in connexion with the repairs to the cathedral, he lost his balance and fell to the ground, being killed on the spot.

AUSTRALIA.—The New South Wales Government is considering a project for connecting the northern and southern shores of Sydney Harbour by a bridge, which would be one of the highest and longest in existence. Such a structure has become a pressing necessity, but although its importance has been recognised by successive ministries, that of which Mr. Lyne is the head has been the first to take practical action in the matter by offering a couple of premiums, one of 1,000*l.*, and another of 500*l.*, open to all the world, for the most suitable designs for the required bridge. The designs must provide for two footways each 10 ft. wide, two roadways each 20 ft. wide, or one roadway 40 ft. wide, also for a width of 24 ft. in the clear for a double line of railway. It is considered that the bridge should be a single tier bridge, as the extra height to be surmounted by the railway or road, as the case may be, might be an objection, but designs showing either the footways or the roadway, or both, overhead, may be submitted, and will receive consideration. The bridge must consist of a single span, and have a clear headway of 180 ft. above high water for at least the middle 600 ft. of its length. The structure must be designed to carry a live load of 130 lb. per superficial foot of roadway and footpath, and every part of the roadway is to be capable of carrying a moving load of 30 tons on two pairs of wheels, and for a train on each line of railway consisting of three of the heaviest class of engine and tender in steam, followed by loaded trucks. The competitive designs must be delivered in Sydney not later than August 1, 1900.

## MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENT.—The business of Messrs. John Allen & Sons, contractors, carried on at Palmerston Works, Kilburn, has been acquired by a company registered as "John Allen & Sons, Limited."

PROPOSED NEW ASYLUM, YORK.—At York City Council a few days ago, the Lord Mayor moved the adoption of the report of the Asylum Visiting Committee, which recommended that the work of erecting the new asylum as far as the architect was concerned should be carried out by their own engineer. The Committee had considered four ways in which they could bring the matter before the Corporation. One was to advertise for designs and have an umpire to settle which was the best. A second was to advertise for a limited competition. The third was to place themselves directly in the hands of some special architect. The fourth way was to utilise the services as far as they could of their own official by placing the work in his hands. The Committee had made inquiries and had visited Middlesbrough Asylum, which was one of the newest asylums, and had been built for a borough very nearly the size of York. Mr. Creer, City Surveyor of York, told them that the site secured by the York Corporation would lend itself to the erection of a similar building. The plans of the Middlesbrough Asylum and of all asylums had been published by the Lunacy Commissioners, and could be purchased for a few shillings in a Blue-book, so that any gentleman who had had the training of an architect could build a similar asylum. Mr. Creer, when asked about the matter, said he should not like to undertake the work unless some recognition was made of the original designer. Some members of the committee, therefore, had an interview with the successor of the gentleman who designed the Middlesbrough Asylum. Having stated the terms on which this gentleman offered to design and superintend the building of a similar asylum for York, the Lord Mayor went on to support the recommendation of the committee to entrust the work to Mr. Creer. Now that the committee had had an interview with the architect, and it had come to nothing, Mr. Creer had withdrawn his stipulation that the original designer should have some connexion with the carrying out of the work, and if the Council saw fit to entrust it to him, was perfectly prepared to undertake it. If the Council agreed to this course there would be a saving in commission, and there would be no inducement to an outside architect or engineer to run them into special extras. They would have the work entirely in their own hands Mr. Alderman Border seconded the resolution. Mr. Alderman Dodsworth did not suppose that in the whole history of the Corporation such a proposition had ever been made to them. The Council, with its knowledge of the overwhelming work already in the hands of the City Surveyor, and of the need which the city had of the whole of his time, was asked to place in his hands additional work involving an estimated cost of 80,000*l.* He was told that the building, designing, and arrangement of an asylum really ought to be done by those who understood the matter, and who had done similar work before. He did not think they ought to pick up published plans and take advantage of the brains of somebody else. Then it should be remembered that Mr. Creer was their City Engineer and Surveyor, and not a practical architect. Mr. Mansfield said the opinion of the doctors with whom the committee spoke was all against the employment of specialists, and they were told of one built by a specialist where practically the whole thing had to be undone. The plan of the Middlesbrough Asylum was on the premises, and belonged to any one in England. Alderman Dodsworth said he intended before sitting down to move an amendment. With the permission of the Lord Mayor, he moved that the matter be referred back to the committee, with instructions to employ an expert architect. Mr. Hibbett seconded, and after discussion, the voting on the amendment was as follows:—For, 13; against, 20. The amendment was declared to be lost and the report of the committee was adopted.

CARPENTERS' HALL LECTURES.—Mr. H. C. Richards, M.P., gave the Thursday evening lecture last week at the Carpenters' Hall, on "Old London," in which he said he felt a special interest, having been born and having lived for his whole life within the precinct of the City of London. He gave a very interesting and fluently-delivered sketch, in a popular manner, of the early stages of the history of London, so far as its probable plan and extent were concerned; of its outward appearance earlier than the thirteenth century little, as he said, was known; but some plans thrown on the screen served to give a good idea of the extent and the main street lines of the early city at several successive periods. Mr. Richards drew the attention of his audience especially to the amount of historical indication which was contained in the names of so many of the City streets, such as Wood-street, Fish-street-hill, &c., &c. If they kept their eyes open to the names of the streets, and began to think why and when those names were first given, they would find a great deal of suggestion as to the past history of the City arising from this source alone. Mr. Richards touched on the early history of various celebrated London buildings existent and non-existent, especially old St. Paul's and St. Paul's Cross, the churches of St. Bartholomew and St. Mary Overie, and many others. Unfortunately the greater number of the intended views were not forthcoming in consequence of the supply of gas to the lantern failing; an accident which certainly ought not to have occurred, and which must have been very disappointing to the audience; though the lecturer, with great *sang froid*, observed that he could go on if the lantern could not, and in fact he kept his audience thoroughly interested and amused through a lecture of longer duration than usual.

STATE OF THE BUILDING TRADES DURING JANUARY.—The *Labour Gazette* reports that employment in the building trades remained fairly steady, but was to some extent affected by the weather. The percentage of unemployed union members among carpenters and plumbers at the end of the month was 2·7, compared with 1·7 in January of last year. Four disputes commenced during January, but two of these have now been settled. The disputes have affected 202 workpeople.

THE STRAND IMPROVEMENT.—The work of demolition of the Strand block which stands between St. Clement Danes and St. Mary-le-Strand has begun. The whole of the Holywell-street block is not coming down, but only the southern half of it—that is to say, the houses on the northern side of the Strand. The removal of the whole block is not to be expected for a long time yet. It will not be begun until the operations for the construction of the great new street from Holborn to the Strand are entered upon; and for this work Parliament allows the County Council seven years, with another three years for "works." There are about thirty houses to come down now, including those which have two numbers, and they stretch some 500 ft. from end to end. Some are old and some have been reconstructed; when they have been removed, four public-houses will disappear, and the "Spotted Dog," the "White Hart," the "Norfolk Arms," and the "Eagle and Sun" will grace the Strand no more. An area of 16,000 square ft. will be cleared. In order to understand the extent of the improvement effected it is necessary to remember that at the present time the width of the Strand between the two ends of the block is sometimes only 40 ft. and is never 50 ft. More than 20 ft. of roadway will, therefore, be added for the horses and there is to be a pavement of reasonable width for the passer-by. At present the houses left standing in Holywell-street will be boarded up on the Strand side.—*Daily Graphic.*

"OLD BUILDINGS, AND THE STORY THEY TELL."—In the Assembly Room in Blackburn Town Hall recently Mr. Arnold Mitchell lectured on "Old Buildings, and the Story They Tell." In the course of his remarks he said that our most beautiful cathedral was Lincoln, while another magnificent one, which was perhaps least known, was that of Wells, in Somersetshire. In fact, one could hardly find a prettier architectural erection. One must always bear in mind that hardly one of our great cathedrals was ever built as such. They were simply minor parts of a big ecclesiastical foundation. French cathedrals were different from ours, inasmuch as they were generally surrounded, even up to their very walls, by buildings. Therefore they could not be viewed to advantage at all from a distance. On the other hand, ours were nearly all free from the influence of other erections, and their different points could be seen in a better light. The late Mr. Ruskin had said that the outside of a building was the wrong side, and the inside the right side. If they applied that saying to one of their cathedrals they would find it a true one. The first style of architecture in the country was the Norman; they would find it was a very severe one. This was accounted for by the fact that when the country was conquered the first thing the Normans did was to erect fortresses to protect the land. Then, when they came to erect the churches, was it to be wondered at that the style somewhat resembled the forts? Mr. Mitchell then showed pictures of several carvings which were to be found in these old places of worship, and explained the meaning which they were intended to convey to the people of that time. In conclusion he pointed out the gradual improvements which had been adopted by the builders, his remarks being further illustrated by lime-light views.

PLUMBERS' EXAMINATION AT KING'S COLLEGE.—Fifteen master and operative plumbers applying for registration under the National Registration of Plumbers attended at King's College recently for examination by the Worshipful Company of Plumbers. The candidates were from various parts of London, and also from Croydon, Grantham, Guildford, Hampton Wick, and Leatherhead. The practical test included lead bossing and the making of large and small joints, and examination in sanitary plumbing included the subjects of contamination of drinking water from faulty connexions, roof covering, arrangement of bath, sink, and closet wastes, drainage of town houses, and disconnexion with sewers. The examiners were:—Mr. Charles Hudson, master plumber, Chairman of the Board of Examiners; Mr. J. Knight, master plumber; Mr. J. Johnson, master plumber; and Messrs. W. Curtis, C. Dean, and A. J. Mills, representing the United Operative Plumbers' Association of Great Britain and Ireland. Five candidates succeeded in passing the practical examination.

NATIONAL WATER SUPPLY CONTROL.—At the half-yearly meeting of the British Association of Waterworks Engineers, at the Geological Society's Rooms, Burlington House, W., Mr. W. Watts (Sheffield) presiding, Mr. C. E. Jones, of Leyton, Essex, read a paper on "The Nation's Supply of Water and its Effective Control." As the best means to the end sought, he advocated the creation of an independent National Water Board, which should include representatives of law, geology, hydraulic engineering, chemistry, and meteorology, and possess wide-reaching controlling powers. The coupling up of distributing mains and other apparatus in contiguous towns or systems should, he said, wherever practicable, be made compulsory; but it seemed hopeless to expect that this combined action would ever be attained except by the intervention of some duly constituted central authority. It took the London water companies half a century to recognise the value of intercommunication, and ultimately a State department had to enforce its adoption. He suggested that the London companies might be advantageously amalgamated. He submitted that the monopolisation of gathering grounds by powerful and wealthy corporations was a growing evil, fraught with peril to smaller communities, and requiring the immediate attention of the legislature. As to the scheme for "tapping" Wales for the benefit of London, he contended that the provision of additional storage capacity in the present watersheds would relegate schemes of this character to the dim and distant future. A long discussion ensued, in which representatives of kindred scientific societies and of local governing bodies, as well as waterworks engineers took part. The preponderant weight of opinion was adverse to the need of greater centralisation than already existed in the powers possessed by Parliament, by the Local Government Board, and the Board of Trade. At the same time, the necessity of amendments of the existing law was pointed out, particularly in preventing the pollution of rivers and protecting rural areas, in the matter of water supply, against the incursions of distant powerful water companies and municipal corpora-

tions. Mr. C. H. Priestley, of Cardiff, was elected President of the Association in succession to Mr. Watts; and, at his invitation, it was decided to hold the summer meeting at Cardiff.

## CAPITAL AND LABOUR.

DUNDEE BUILDING TRADES DISPUTE.—A general strike of the masons of Dundee occurred on Saturday last, and at a meeting of the men it was reported that fully 300 men were idle. The wages of the men are at present 9d. per hour for builders, and 8½d. for hewers, and it is proposed to reduce this rate by ½d. The plumbers have come to a unanimous decision also to resist a proposed reduction of their wages from 9d. to 8½d. per hour. The other allied trades are discussing the matter.

## LEGAL.

### IMPORTANT ACTION AGAINST A DISTRICT BOARD OF WORKS.

THE case of Fernley *v.* the Limehouse District Board of Works came before Mr. Justice Kekewich in the Chancery Division on the 13th inst., an action brought by the plaintiff, the freeholder of Nos. 25 and 26, Wapping-wall, Shadwell, for a declaration that a resolution passed by the defendants on May 3, 1899, to acquire the plaintiff's houses for the purposes of street improvements, under Michael Angelo Taylor's Act and the Metropolis Local Management Act, was *ultra vires* and not passed in good faith. The facts, which were rather peculiar, were as follows:—The plaintiff's two houses were situated on the north side of a street called Wapping-wall, Shadwell, and each house facing south contained certain ancient lights. The land on the opposite or south side of the street belonged to four gentlemen named Ward, Anderson, Weber, and Smith, and included a passage and staircase leading from Wapping-wall to the River Thames, known as King James's Stairs, over which the plaintiff had a right of way. The land on each side of the plaintiff's houses, viz., on the north side of Wapping-wall, also belonged to these four gentlemen. In 1898 Messrs. Ward, Anderson, Weber, and Smith removed their old buildings on the south side of Wapping-wall and commenced to erect warehouses thereon to a height exceeding by about 40 ft. the height of the old buildings, such new buildings also encroaching on Wapping-wall and King James's Stairs. The plaintiff in August, 1898, complained to those gentlemen about this, and the completion of the warehouses was stopped. At a meeting of the defendants held on May 3, 1899, they, in the exercise of the powers vested in them for the improvements of streets by Michael F. Angelo Taylor's Act and the Metropolis Local Management Act resolved that Wapping-wall should be improved, altered, widened, and extended, and that the plaintiff's houses, amongst others, prevented such improvement, and that it was necessary to acquire the plaintiff's houses and premises for the purposes of such improvement. The defendants on May 5, 1899, gave the plaintiff notice to treat for the whole of his premises, and, in a letter, said that they were acting on a report from their surveyor that the improvement could not be effected with safety to the public unless the plaintiff's land and premises were taken, and that as soon as the improvement was completed the defendants would give the plaintiff the option of repurchasing under Taylor's Act the part of the premises not required. The plaintiff's case was that this resolution was not passed in good faith, but by reason and in pursuance of certain agreements made between the defendants and the four gentlemen before mentioned. The plaintiff, therefore, claimed a declaration that the adjudication by the defendants, in so far as it adjudged that the premises belonging to the plaintiff prevented the improvement and that the purchase of the premises as being necessary for the purpose of carrying out such improvement, was *ultra vires*, and not made in good faith. He claimed a declaration that such alteration, widening, and extension of the street in question was not an improvement, alteration, widening, or extension within the meaning of any of the Statutes, and asked for an injunction to restrain the defendants from proceeding on their notice to treat, or alternatively on so much of the notice to treat as referred to such parts of the plaintiff's premises as were not required for the purpose of the improvement. It appeared that on March 10, 1899, in another action brought by the plaintiff against the defendants, the Court granted a perpetual injunction to restrain the defendants from proceeding on a notice to treat dated February 16, 1899, on the ground that by an agreement made in January, 1899, they had agreed to sell the part of the plaintiff's land not required for the purpose of the improvement of Wapping-wall to third parties without allowing the right of pre-emption reserved to the plaintiff by Taylor's Act. The defendants denied that the warehouses would encroach on Wapping-wall, except to a trifling extent, or would encroach at all on King James's Stairs. They admitted, however, that the warehouses would to a certain extent affect the access of light to the plaintiff's windows. Since the injunction granted on May 10, 1899, the defendants, by an agreement dated April 29, had cancelled the clause in the agreement of January 27, 1899, which was inconsistent with the rights of the plaintiff. The defendants' submission was that the resolution of May 3, 1899, was bonâ-fide, and that it was necessary for the safety of the public to take down the whole of the houses.

In the result his Lordship held that the defendants were entitled to pull down the plaintiff's two houses; but, having regard to the previous action and injunction, and the subsequent adjudication and notice to treat, he should award the defendants no costs.

Order accordingly.

Mr. Warrington, Q.C., Mr. Wilkinson, and Mr. Macoun appeared for the plaintiff; and Mr. Renshaw, Q.C., and Mr. Lambert for the defendants

### ACTION FOR PERSONAL INJURIES.

AT the Clerkenwell County Court on Friday last week, before His Honour Judge Edge, John Fisher, gasfitter, of Providence-row, King's Cross, claimed from Mr. W. J. Pratt, builder, 89, Plimsoll-road, Finsbury Park, 50*l.* damages for personal injuries.

Mr. Lynch was counsel for the plaintiff and Mr. Bassett Hopkins, barrister, represented the defendant.

Plaintiff gave evidence to the effect that on October 16 last he was working for the defendant. On that morning he went to work at half-past six, and was told to get out the ladders, taking one to the Wesleyan Chapel, Finsbury Park, where he unloaded the truck, defendant having said that they would have to do the best they could with the ladders they had got. The ladder he used had a broken rung at the bottom, and had no contrivance to prevent it slipping. He went up the ladder to clean out the gutter, but found the ladder slipping, and he came down a distance of 25 ft. His foot was badly injured. He was taken on a truck to a tram-car to see a medical man, and afterwards to the University College Hospital. He sustained a sprained ankle. His wages were 7½d. an hour, and on the average he worked fifty hours a week.

Cross-examined: Another workman named Redmond did not ask him whether it would be safe to go up the ladder, nor did he ask whether he should hold it at the bottom. The bottom rung was out of the ladder, but he did not complain about it.

Medical evidence having been called as to the injuries to the plaintiff's foot, Mr. Bassett Hopkins submitted that there was nothing to bring the case within the Employers' Liability Act.

The Judge asked what was the defect and negligence of the defendant.

Mr. Lynch submitted that it was an improper ladder, as it was not high enough.

Evidence was called on behalf of the defendant that the plaintiff never asked for a larger ladder, and also that there was no necessity, when asked, for any one to stand at the foot of the ladder.

The Judge remarked that the weight of evidence was against the plaintiff; but Mr. Lynch submitted that all the probabilities were in his favour.

At the close of a long hearing, the Judge said that it was a great pity that there should be such divergent evidence when a workman had met with an accident. When there was a strong conflict of evidence like that, he must fall back on the old rule of law, that it was for the plaintiff to make out his case to his satisfaction. He had not done so, and the balance of evidence was against him. The verdict would, therefore, be for the defendant, with costs.

### IMPORTANT CASE UNDER THE WORKMEN'S COMPENSATION ACT, 1897.

THE case of Mason *v.* A. R. Dean, Limited (Moore & Sons third parties), came before the Court of Appeal, composed of Lords Justices A. L. Smith, Collins, and Romer, on the 17th inst., on the appeal of Mrs. Mason, the applicant, under the Workmen's Compensation Act, 1897, from a judgment of the County Court Judge of Salford, on a special case stated by an arbitrator under the Act, who had awarded the applicant 300*l.* compensation with costs against the respondents for the death of her husband, who had been killed in the course of his employment by a fall from a scaffold. It appeared that the employers of Mason, the deceased man, carried on business at Birmingham as furnishers and decorators, and the accident happened on February 10, 1899, at the Lyceum Theatre, Eccles, near Manchester. The theatre, at this time, was not a complete building, but exceeded 30 ft. in height, and was being constructed by means of a scaffolding. Messrs. Moore & Sons had, prior to the date of the accident, contracted with the building owner for the construction of the building and for the erection of the scaffolding from which Mason fell. The architects of Messrs. Moore & Sons let off to A. R. Dean, Limited, certain decorative work under powers reserved in Messrs. Moore & Sons' contract, but the scaffolding used by Mason and the other workmen was erected by Messrs. Moore & Sons at the expense of the building owner. At the time the accident happened Mason was engaged in doing for his employerr, A. R. Dean, Limited, part of the work which they had contracted with the building owner to do, viz.: painting the ceiling of the theatre. Mason was walking on the scaffolding when one of the planks gave way, and he fell to the pit floor and was killed instantly. The widow of Mason then claimed compensation under the Act, making the employers respondents to the arbitration. The respondents denied liability on the ground that the employment of Mason was not an employment to which the Act applied. They also alleged that, as Messrs. Moore & Sons erected the defective scaffolding, they were the persons responsible for the scaffolding. The respondents served on Messrs. Moore & Sons a notice of claim to indemnity against all liability on account of any accident caused by the scaffolding. Before the arbitrator it was contended on behalf of the applicant that the respondents were "undertakers" within the meaning of Section 7, Sub-Section 2, of the Act, and that they were engaged on work of construction in a building exceeding 30 ft. in height, and then being constructed by means of a scaffolding. The respondents contended that the work which they had contracted to do was not work of construction within the meaning of the Act, and that they were not "undertakers" within the meaning of the Act. The arbitrator found that the respondents were "undertakers," and that they were engaged in the construction of a building exceeding 30 ft. in height, such building being then in course of construction by means of a scaffolding, and awarded the widow the sum of 300*l.* with costs as before stated. At the request of the respondents the arbitrator stated a case for the opinion of the County Court Judge, the question for decision being:—(1) Whether the respondents were "undertakers" in the construction of the building within the meaning of the Act; (2) whether the employment in the course of which the injuries were caused to the deceased workman was employment to which the Act applied. The County Court Judge set aside the award of the arbitrator with costs, on the ground that, though the respondents were "undertakers" engaged in the construction of a building within the Act, yet the case of "Wood *v.* Walsh & Sons" showed that painting the ceiling of the theatre was not an employment within the Act. Hence the present appeal of the applicant, the widow of Mason.

At the conclusion of the arguments of counsel, Lord Justice Smith, in giving judgment, held that the respondents were liable. The decision in the case of "Wood *v.* Walsh & Sons" he held had nothing to do with the present case. In the present case the respondents were put on to do certain work which would help to bring the building to completion. The contract of the respondents with the building owner showed that the work they had to do included the putting up of a ceiling, the erection of a proscenium, and the fixing the private boxes with columns, caps, &c. No doubt a good deal of the work was decoration pure and simple, but it was ample to show that they had also to perform structural work. It was clear that the deceased man was employed on a building within the meaning of the Act. In his opinion a person who undertook the construction of a substantial part of a building was an "undertaker" within the meaning of the Act. For those reasons he thought that the judgment of the County Court Judge was wrong and that the applicant was entitled to the compensation which had been awarded to her by the arbitrator.

The other Lords Justices concurred, and the appeal was accordingly allowed, the judgment of the arbitrator being restored.

The Court refused to make any order as to the costs of the third parties who had been served with notice of the appeal.

Mr. K. W. Harper appeared for the applicant; Mr. C. A. Russell, Q.C., and Mr. Byrne for the respondents; and Mr. Amos for the third parties.

### IMPORTANT ANCIENT LIGHT DISPUTE AT WESTMINSTER.

THE case of Symons & Co., Limited, *v.* the Army and Navy Co-operative Society, Limited, came before Mr. Justice Kekewich in the Chancery Division on the 20th and 21st insts., it being an action by the plaintiffs for an injunction to restrain the defendants from erecting premises at Artillery-row, Westminster, which, it was alleged, would interfere with the access of light to certain windows in the plaintiff's premises.

Mr. Warrington, Q.C., and Mr. Stroud appeared as counsel for the plaintiffs; and Mr. Renshaw, Q.C., and Mr. Elgood for the defendants.

Mr. Warrington, in opening the plaintiffs' case, said that his clients were a company carrying on the business of upholsterers and cabinet-makers, the defendants being the well-known Stores. The plaintiffs occupied for the purposes of their business certain workshops and show-rooms and other buildings known collectively as No. 25, Artillery-row, Westminster. These buildings abutted on the south side upon certain land now partly occupied by a high building called the Artillery Industrial Buildings, and on the other part of which the defendants were proposing to erect a high warehouse of about 79 ft. 9 in. in height. On the piece of ground on which the defendants were proposing to erect this building there were formerly no buildings

at all. The plaintiffs enjoyed in connexion with their premises the light coming through certain ancient windows, and in particular in respect of a building occupying the southern part of their premises, and adjoining the boundary wall between their premises and the defendants', two skylights lighting the workshop. The Artillery Industrial buildings were high buildings put up some years ago, and they somewhat interfered with one of the plaintiffs' skylights. To some extent the present case was rather different from the ordinary cases of this character, inasmuch as the defendants had changed their plans since the first plans were made, and since the action was commenced, although on that there was some conflict of evidence. On May 3 last year the defendants served the plaintiffs with a party wall notice, and at about that time showed the plaintiffs' architect what they intended to do. It appeared from that notice that the defendants proposed to erect a building which came up to the eastern skylight. Subsequently, the plaintiffs' advisers pointed out to the defendants that their proposed building would cause a serious interference with their light. On May 24, the defendants withdrew the party wall notice, and served upon the plaintiffs what was known as an "external wall notice" under the London Building Act. The defendants seemed to have discovered that the wall in question was not a party wall, but was a wall which belonged to the plaintiffs. The effect of the "external wall notice" was to tell the plaintiffs that the defendants meant to build up close to their wall. During the last week in May and the first week in June negotiations were entered into with respect to the purchase of the plaintiff's premises by the defendants, but these fell through. On June 14, Mr. Pawley, the plaintiffs' architect, and Mr. Reginald Blomfield, the defendants' architect, met to see what arrangement could be made as to the building, but nothing came of the interview. The plaintiffs had no notice of the defendants having had prepared new plans, nor was the "external wall notice" withdrawn. In September, however, the defendants began, in pursuance of that notice, to build a 3-ft. thick wall right up against the plaintiffs' wall. When the action was commenced the wall had been raised to a height of 5 ft. This would have suggested to any architect that a very high building was to be erected. The writ was issued on September 26. On October 10 Mr. Blomfield filed an affidavit to which he exhibited certain plans which he said were the plans the defendants had adopted for their building. That was the first intimation to the plaintiffs that there had been any departure from the defendants' original plans. The plaintiffs' case was that the building, even if erected in accordance with these amended plans, would interfere with at least one of the skylights. Even supposing it did not interfere with the light at all, the plaintiffs were quite within their rights in commencing the action inasmuch as the defendants had never withdrawn their "external wall notice," and the plaintiffs were entitled to the costs of the action. The learned counsel said that on November 18 the plaintiffs had suggested to the defendants, so as to make an end of the matter, that they (the plaintiffs) would withdraw any objection to the defendants' building if defendants would undertake to build only in accordance with the amended plans, and to pay the plaintiffs' costs as between solicitor and client. That offer was not accepted, and, therefore, the plaintiffs were bound to go on with the action. The plaintiffs did not admit that the defendants' building as it was now proposed to be erected would not interfere with their rights, but they were prepared to waive those rights if the defendants would give the undertaking and pay their costs.

Evidence having been called to prove that the lights were ancient, Mr. G. W. Symons, the managing director of the plaintiff company, stated that his lease of the premises expired in 1905, the defendants having acquired the reversion of the lease. The witness spoke as to the importance of having plenty of light on the cabinet maker's bench, and said that the defendants had never withdrawn the "external wall notice."

Cross-examined by Mr. Renshaw, the witness said that he had offered to surrender the lease to the plaintiffs for 2,000*l*. He considered this a reasonable offer considering what he had spent on the property and the difficulty he would have in getting other suitable premises.

Mr. C. J. Pawley, the plaintiffs' architect, in the course of his evidence, said that when in September his attention was called to the wall which was being erected by the defendants, he came to the conclusion, from the nature of the foundations and the thickness of the wall, that it was meant to carry out the plans which Mr. Blomfield had shown him. If a building in accordance with these plans were erected, it would make the plaintiffs' skylight useless for all practical purposes.

On taking his seat in court on the 21st inst., his lordship said that since he rose the day previously he had studied the question, and now understood, he thought, the position. The case was a very peculiar one, because, if the plaintiffs succeeded in establishing interference with their light, they might win all along the line; but, subject to that, the question seemed to be solely as to when first the plaintiffs knew the defendants were going to alter their plans.

Mr. Warrington agreed, and said that no doubt plaintiffs' architect knew that an alteration would be made in June.

His Lordship: That seems to me to be simply a question as to how the costs should be distributed.

Mr. Pawley, in cross-examination by Mr. Renshaw, said that when he met Mr. Blomfield on June 1, Mr. Blomfield might have told him that when he drew the plans he had not noticed the skylights in the plaintiffs' building. The only discussion on that day was as to whether the plaintiffs should sell their interest in the lease. No plans were produced then. On June 14 Mr. Blomfield asked witness if he would agree to the appointment of Mr. I'Anson as third surveyor to settle the dispute as to the line to which the defendants' building should be set back to, but witness replied that he had no instructions in the matter. Mr. Blomfield never told him that the defendants had abandoned all idea of building in accordance with the original plans. Until October 11 he had no idea that the plans had been altered. In his opinion the new buildings proposed to be erected by the defendants would affect materially the plaintiffs' skylights, but the eastern skylight would be affected to a much greater extent than the western.

Re-examined, the witness said that there was nothing to indicate that the defendants had changed their mode of building since they gave the "external wall notice."

Mr. Collins, an architect, gave evidence to the effect that the defendants' building, if built in accordance with the amended plans, would diminish the light coming to the eastern skylight to the extent of 60 deg.

This being the plaintiffs' case, Mr. Renshaw called Mr. Blomfield, the defendants' architect, who said that when he saw Mr. Pawley on June 1 he told him that the plans which he had then prepared were not to be taken as final plans, as they would no doubt require alteration. Witness then did not produce any plans or drawings. They also discussed the "set back" of the building. On June 14 Mr. Pawley and he again discussed the question of the line as to the set back of the building, and witness suggested that the matter should be referred to arbitration. The altered plan was made in June after he had received instructions from his Board of Directors. The modification of the plan involved the setting back all round the plaintiffs' building. The reason why the foundation of the wall which had been spoken of was of such a substantial character was that the plaintiffs' premises came into the possession of the defendants in five years, and then the defendants intended to carry it up to its full height. He was of opinion that the building which the defendants now proposed to erect would not materially affect even the eastern skylight in the plaintiffs' premises.

Cross-examined: The witness said that an architect might come to the conclusion from the appearance and thickness of the foundations of the wall, that it was intended to carry the wall up to a height of 80 ft.

Mr. E. B. I'Anson, architect, examined, said that he was shown the modified plans of the defendants' proposed building some time before June 22 last. He did not think the building would have any material effect on the light to the eastern skylight. There would be a slight obstruction, but nothing material.

Mr. Edward Drew Drury, an architect and the District Surveyor of Westminster, corroborated the evidence of the last witness.

This being the defendants' case, Mr. Renshaw addressed his lordship, and submitted that no case had been shown for granting an injunction, or even damages, except to the extent perhaps of one farthing The case had really been reduced to the diminution of light to one skylight. He contended that the plaintiffs were not justified in commencing the action. The plaintiffs had no right to assume that the defendants intended to build according to the original plans.

Mr. Warrington having replied on behalf of the plaintiffs, his Lordship, in giving judgment, said that the plaintiffs' case had really come down to the proposed building of the defendants' obstructing the light of only one of the plaintiffs' skylights, viz., the eastern skylight in the workshop. He was of opinion that the erection of the defendants' building according to the modified plan would materially diminish the light coming to this skylight, and that this would cause serious injury to the plaintiffs, having regard to the fact that this workshop was used for cabinet making. He therefore granted an injunction with regard to this skylight, and ordered the defendants to pay the costs of the action, but directed that the Taxing Master should disallow the plaintiffs any costs incurred with respect to their claim in regard to the skylights in a building which was described as the "long stable."

## DISPUTE AS TO A BUILDING COVENANT.

THE case of Kimber *v.* Admans came before the Court of Appeal, consisting of the Master of the Rolls and Lords Justices Rigby and Vaughan Williams, on the 16th inst., on the appeal of the plaintiff from a decision of Mr. Justice Cozens-Hardy, in the Chancery Division, refusing to grant an injunction restraining the defendant from erecting certain flats on certain plots of land forming part of a building estate, of which the defendant was the owner of an adjoining plot.

It appeared that each plot of land was subject to a covenant not to build more than one house upon it, and the defendant proposed to build a block of flats upon each plot of land belonging to him, which the plaintiff alleged was a breach of the covenant. Mr. Justice Cozens-Hardy being of opinion, upon the construction of the covenant, that each block of flats was one house only, and not a series of houses, refused the injunction, from which decision the plaintiff now appealed.

At the conclusion of the arguments of counsel the Court dismissed the appeal, the Master of the Rolls being of opinion that the covenant in question did not refer to the mode in which the building was to be sub-divided and let, but to the aggregate of the rooms making up the building. The covenant was directed not to the parts but to the aggregate.

Lords Justices Rigby and Vaughan Williams agreed.

Mr. W. H. Cozens-Hardy appeared for the plaintiff, and Mr. Buckmaster for the defendant.

## THE WELSBACH INCANDESCENT GASLIGHT COMPANY, LIMITED, *v.* THE NEW INCANDESCENT (SUNLIGHT PATENT) GAS LIGHTING COMPANY, LIMITED, AND OTHERS.

IN the Chancery Division, on Thursday last week, before Mr. Justice Buckley, judgment was delivered in this case. The action was brought for an injunction, damages, and other relief in respect of alleged infringements by the defendants of the plaintiffs' patent (granted to Mr. Oliver Imray in 1886) for an improvement in an illuminant appliance for burners.

Mr. Justice Buckley discussed at length the nature of the invention. He said a very small amount of utility was sufficient to support a patent, and a suggestion to the public of the use of a certain rare earth mentioned as a means to an end gave utility to the patent for the purposes of the Patent Law. With regard to the question of infringement, he also decided in favour of the plaintiffs, and gave them an inquiry as to damages and an order for destruction or delivery up of the infringing articles and costs. [We are informed that Messrs. Michael Abrahams, Sons, & Co. have, on defendants' behalf, served notice of appeal from such decision.]

## ABSENCE OF A PROPER AGREEMENT WITH REGARD TO EXTRAS.

AT Brompton County Court, on Tuesday, before Judge Stonor, Mr. F. Furneaux, jobbing builder, Earl's Court-road, London, S.W., sought to recover 12*l*. 13s. from Mr. G. Morey, builder and contractor, Newcombe-street, Notting-hill, W., the claim being for balance of an account for work done.

Mr. J. Malkin, solicitor, appeared for the plaintiff, and the defendant personally conducted his case.

The plaintiff stated his case as follows: In August last the defendant asked him to give an estimate for some drainage work, portion of a job which he (defendant) had taken under a contract. Plaintiff gave a written estimate, the amount being 40*l*. The defendant instructed him to proceed with the work, but after about a fortnight brought him plans and specifications for the work. He then found that so many extras were included in the plans and specifications that he could not make his work pay at the price given in. He spoke to the defendant about the extras, but the latter said, "Get on with the work as quickly as you can, and I will see what I can do with you afterwards." The work was finished, and an account for 64*l*. 13s. sent in. The defendant paid him 52*l*.—12*l*. more than the estimated price—and the present claim was for the balance of 12*l*. 13s.

The Judge: Was there a verbal contract about the extras? What did the defendant say when you said you could not make the job pay for 40*l*.?

The plaintiff: He told me to get on with the work, and gave me to understand that he would pay a reasonable price.

The defendant: He knew what the work was when he estimated. A competent man would not require plans and specifications to help him in giving a price for drainage work like this work. He misled me in estimating the job at 40*l*.

The Judge: I see the estimate says, "to finish all in a workmanlike manner." But why did the plaintiff go on with the work without a definite agreement with regard to the extras, if there were any extras?

The defendant: He threatened to clear all the men off the job if I didn't pay him extra, so I gave him the extra 12*l*.

The Judge: What were the extras?

The plaintiff: All the pipes were double-jointed, and I didn't know that when I estimated.

The Judge: Then you ought to have objected to do the extras in the absence of a proper agreement as to payment. I think, however, that you are entitled to something extra. I find for the plaintiff for 2*l*., with costs.

## RECENT PATENTS:

### ABSTRACTS OF PATENTED INVENTIONS.

22,054.—BURNERS FOR ACETYLENE LAMPS: *G. & F. W. Bray.*—The inventors seek to obviate the deposit of carbon upon a Bunsen burner used for lighting with acetylene gas; with the burner they combine a contrivance in which are side openings and an orifice for the gas jet, layers of muslin serve to arrest dust particles, and a set of separate jets can be disposed to impinge upon one another.

22,071.—CUT-OUTS, LIGHTNING-ARRESTERS, AND OTHER SAFETY DEVICES: *F. A. Fleming.*—These are arranged as either from one line to earth or a bridge across the circuit. In series with one fusible cut-out of a series is arranged a single or multiple spark. If the fuse-wires are strained with a weighted lever, it is provided that when the lever falls after a fuse blows it shall complete circuit for the next fuse. By another plan the fuse wires are strained by means of a spring-controlled arm, which is joined to the second lead or earth and moves around against the fuse-plates, being released whenever a fuse is broken. An alarm circuit is closed before the last fuse is reached.

22,078. — ROAD CLEANING AND SWEEPING MACHINE: *A. C. A. Dupuy & F. Ray.*—The machine performs two distinct operations: its bladed drum picks up small stones, and then dust and other deposits are swept away into a separate receiver. The drum is mounted in the fore-carriage which also serves as a receptacle for the small stones that are guided into it by an apron. At the back of the machine is a tool-box for the brush and for large stones picked up by hand; the brush gathers the dust and passes it from an apron up a concave guide to a sub-compartment, gearing from the front and rear wheels turns the drum and brush, their journals being mounted in slides which can be lifted as may be desired, the brushes have bunches of bristles that are fixed upon bars carried by screw-spokes fitted into the hubs, the rows of the bunches being hard and short, and soft and long, in turns.

22,087.—AIR-EXTRACTORS FOR FACTORIES, &C.: *W. Platts & G. H. Cowen.*—In one of the many forms to which the contrivance is adapted partitions are placed so as to divide the uptake into a set of passages each of which opens into its own corresponding downtake; or a cowl may be placed over the uptake, the uptake and cowl being similarly divided with partitions, whilst the passing of dust and downdraught are prevented by pierced valves placed in the downtake.

22,110.—AN ACETYLENE GENERATOR: *F. Schneeweis.*—An open box, made of sheet metal, has a sloping bottom and a partition inclined in a reversed direction, so as to leave an opening which is to be closed, as may be required, with a valve turned by an outside handle. The box is charged with water, and carbide is laid in the open portion, whence it falls through the opening to the bottom of the box; a cock at the base of the generator serves for removal of the residue.

22,135.—A LOCKING DEVICE FOR TROLLEYS: *W. Griffiths.*—The pushing backwards or lowering of the handle causes a pallet of the anchor escapement to rest upon a projection formed on one of the wheels, which thereupon becomes locked.

22,141.—WATERPROOF COMPOUND FOR MAKING ROOFING-FELTS, PANELS, BRATTICE-CLOTHS, &C.: *T. Thomson.*—The composition, formed of tar, pitch, or some resinous material mixed with ground wood, and, it may be, with lime or another drying material, and also strengthened with jute, flax, cotton, or other cloth, is laid upon a web of fabric, or is rolled up in sheets. If panels, linings, or veneers are required, a fine varnish is mingled with the ground wood, which is then spread upon paper, a thin fabric, or millboard; dyes, or pigments, can be added if desired.

22,144.—COMBINED RIVING-KNIFE AND CIRCULAR-SAW GUARD: *T. N. Robinson.*—To a sliding block, which is to be lowered or lifted by means of screws, is attached a horizontal arm that carries a curved plate, which serves as a guard for the saw's front and top. Another curved plate, on to which is cast or bolted a riving-knife, forms the back guard; it is lifted by the wood when it is being sawn, and is hinged on to a block, which is clamped to the curved plate upon the horizontal arm.

22,182.—BLAST AND CUPOLA FURNACES: *A. Reynolds.*—Gas and compressed air are supplied to the tuyères, inclined downwards, of the furnace, the air pipes being joined to the main air-supply pipes and having pipes which convey compressed air to the producers; by another arrangement gas from only one producer is supplied to the tuyères, or the latter may be fed with air and gas from some chambers underneath the furnace, and joined to remote sources of air and gas respectively; for smelting or melting purposes solid fuel is not used, and if chromite is to be smelted, for obtaining ferro-chrome, acid or neutral linings are provided for the furnaces wherein water gas should by preference be utilised.

22,207.—HEATING AND VENTILATING WORKSHOPS: *V. Hercelle-Leruste.*—For workshops wherein steam, vapours, and odours are produced to any great extent, the roof is rendered non-condensing by stopping up its chinks, or external air is excluded by means of an isolated air-chamber, which is made beneath the roof to keep the temperature constant; the walls also are made non-conducting as regards heat, whilst heating pipes, arranged in front of openings for the admission of fresh air, maintain a sufficiently warm temperature within; the air charged with moisture is carried away by means of ventilators and fans, which also draw fresh air into the workshop.

22,241.—ROOFS FOR PAVILIONS, STATIONS, MARKETS, &C: *W. Tester.*—The roofs consist of triangular sections, which are supported upon an outer framework and by radial suspension cables or chains, secured to either outer pillars or the ground. The framework is composed of braced girders or radial ribs, and has concentrical polygon-shaped girders. If a permanent structure is to be erected the spaces between the columns may be filled with brickwork, and drainage gutters are fitted in the radial ribs, but for temporary purposes the framework may consist of timber and scaffold-poles, carrying a canvas covering upon suspension ropes and rods.

22,242.—ARTIFICIAL STONE: *G. A. Kiefer.*—By adding sulphuric acid of 66 deg. Bé, together with sawdust, dust, ashes, sand, peat débris, &c., to ground hydraulic lime, the latter becomes partly converted into calcium sulphate; then is added an admixture of calcined plaster and borax solution, and the mass is run into moulds; the plaster employed, which should be quite anhydrous, is produced by a complete calcination of gypsum.

22,262.—SUPPORTS FOR GIRDERS, ROOFS, BRIDGES, &C.: *H. Rigby.*—A double-ended knuckle-block is made with stops or ribs that bear against surfaces of the saddle pieces as the fabric expands or contracts unduly by reason of variations of temperature, one end of the girder, &c., rests upon the block, which, when it becomes inclined, is thereby prevented from slipping out of its position.

22,270.—CONTINUOUS KILNS FOR BRICKS, LIME, &C.: *F. G. Maanlt.*—The invention concerns kilns that are heated with gas generated beneath the kiln chambers, the ovens or generators being after the kind that are heated (before they are charged with coal) by the products of combustion. A set of transverse arched chambers are arranged under the kiln chambers, and gas is generated in the former from coal. The gas passes upwards, through openings in the floor, to the kiln chambers, and is there burned together with air. Openings in the floor convey waste gases to the empty generators, and then through flues into the main flue, their passage being regulated with dampers. As the generators first charged are exhausted the coke is taken out, and the other generators are charged, in their turn, with coal.

22,302.—WASTE WATER FLUSHING: *F. & S. H. Dibble (Samuel Dibble & Son).*—An open chamber, into which the sink discharges, is provided with edges that are turned over, and leads to a tipper that is mounted within a trapped hopper joined to the basin's flushing rim; in some instances a straight channel, having a trap in its length, is laid between the tipper and the sink.

22,310.—TILES FOR ROOFS AND WALLS: *R. Y. Foley.*—To prevent the passage of rain or snow the tile's upper surface is fashioned with transverse ribs, over which will fit grooves that are formed in the tile's under surface, the ribs are curved or bevelled, in order that water may run down them, and the grooves are formed broader than the ribs.

22,430.—COCKS AND VALVES: *H. C. Schmidt.*—For taps or cocks which are constructed so as to close in the direction of the flow. The valve is set upon the spindle at a point between its seat and a bridge into which the spindle's inner end is screwed, whilst the spindle's outer end is passed through a smoothened hole in the tap's casing.

22,448.—FUEL-ECONOMISING STOVES: *W. M. & D. Keith.*—A portable grate is devised that may be used, for economising fuel, with existing fire-grates. It consists of a sunken grate to be fixed by its hooked brackets upon the front bars of an ordinary grate, and having a sloping plate pivotted to its back with pins. The sloping plate will adjust the incline of the sunken grate so as to regulate the amount of fuel to be laid upon it, and, whilst turning the ashes away from the grate, will also deflect heat into the room and warm the supply of air to the grate.

## MEETINGS.

### FRIDAY, FEBRUARY 23.

*Architectural Association.*—Mr. A. W. Hennings on "The Exterior Treatment of Sharp or Acute Angles in Street Buildings"—illustrated by lantern views. 7.30 p.m.

*Sanitary Institute (Lectures for Sanitary Officers).*—Calculations, Measurements, and Plans and Sections. 8 p.m.

*Royal Institution.*—Professor J. H. Poynting on "Recent Studies in Gravitation." 9 p.m.

*Institution of Civil Engineers (Students' Meeting).*—Messrs. B. Humphrey, and H. E. O'Brien, on "Bearing Springs." 8 p.m.

*Glasgow and West of Scotland Technical College (Architectural Craftsmen's Society).*—Mr. J. Lochhead on "The Decay of Building Materials." 8 p.m.

### SATURDAY, FEBRUARY 24.

*Architectural Association.*—Spring visit to the Artisans' Dwellings in course of erection on the Millbank estate. 2 p.m.

*Builders' Foremen and Clerks of Works' Institution.*—Annual Dinner, King's Hall, Holborn Restaurant. 6.30 p.m.

*Sanitary Institute (Demonstrations for Sanitary Officers).*—Inspection at the Sutton Sewage Works. 3 p.m.

*Dundee Institute of Architecture.*—Mr. C. Ower on "Travel, part of an Architect's Education," with lime-light illustrations. 7 p.m.

*Edinburgh Architectural Association.*—Visit to Shrubhill Cable Station and Macdonald-road Electric Light Station.

*People's Palace Architectural Society.*—Visit to L.C.C. Sewage Works at Barking.

### MONDAY, FEBRUARY 26.

*Surveyors' Institution.*—Adjourned discussion on the paper read at the last meeting by Mr. H. T. Scoble, entitled "The Bacterial Treatment of Sewage." 8 p.m.

*Sanitary Institute (Lectures for Sanitary Officers).*—Dr. Joseph Priestley on "Ventilation, Warming, and Lighting." 8 p.m.

### TUESDAY, FEBRUARY 27.

*Builders' Clerks' Benevolent Institution.*—Annual general meeting of donors and subscribers. 7.30 p.m.

*Sanitary Institute (Demonstrations for Sanitary Officers).*—Inspection at J. Knight & Son's Soapworks, Silvertown. 3 p.m.

*Institution of Civil Engineers.*—Mr. John Dewrance on "Corrosion of Marine Boilers." 8 p.m.

### WEDNESDAY, FEBRUARY 28.

*Society of Arts.*—Professor Charles A. Carus-Wilson, M.A., on "Pneumatic Despatch." 8 p.m.

*Sanitary Institute (Lectures for Sanitary Officers).*—Dr. J. C. Thresh on "Water Supply, Drinking Water, Pollution of Water." 8 p.m.

*Edinburgh Architectural Society.*—Mr. John Begg on "Johannesburg Before and After the War, from an Architect's Point of View." 8 p.m.

### THURSDAY MARCH 1.

*Carpenters' Hall, London Wall (Free Lectures on Matters connected with Building).*—Mr. C. Stanley Peach on "Electric Light Stations." 8 p.m.

*Civil and Mechanical Engineers' Society.*—Mr. M. O'Gorman on "Ventilation of Large Buildings." 8 p.m.

*London Institution.*—Professor Silvanus P. Thompson on "Electric Locomotion"—illustrated. 6 p.m.

*Royal Institution.*—Dr. Charles Waldstein on "Recent Excavations at the Argive Heræum (in Greece)"—illustrated by lantern slides. I. 3 p.m.

### FRIDAY, MARCH 2.

*Institution of Junior Engineers.*—Paper on "Electrolytic Zinc as a Protective Metallic Coating for Iron and Steel," by Mr. William Paddon. 8 p.m.

*Sanitary Institute (Lectures for Sanitary Officers).*—Mr. H. D. Searles Wood on "Building Materials." 8 p.m.

### SATURDAY, MARCH 3.

*Institution of Junior Engineers.*—Visit to Messrs. Maudslay, Sons, & Field's Belleville Boiler Works, East Greenwich. 3 p.m.

*British Institute of Certified Carpenters.*—Visit, at 3.30 p.m., to Royal Hospital, Chelsea. Meeting at Carpenters' Hall at 6 p.m., when Mr. Henry Adams will read a paper on "Some Comparisons of Graphic Statics Applied to Roofs."

*Royal Institution.*—The Right Hon. Lord Rayleigh on "Polarised Light." I. 3 p.m.

*Sanitary Institute (Demonstrations for Sanitary Officers).*—Inspection at the Express Dairy Company's Farm, College Farm, Finchley. 3 p.m.

## SOME RECENT SALES OF PROPERTY:

### ESTATE EXCHANGE REPORT.

February 7.—By WILLIAM WESTON (at Paddington).

| | |
|---|---|
| Paddington.—35, Goldney-road, u.t. 62¾ yrs., g.r. 8*l.*, r. 45*l.* | £470 |
| Maida Hill.—3, Delamere-ter., u.t. 43 yrs., g.r. 10*l.* 10s., r. 60*l.* | 510 |
| Bayswater.—42, Burlington-rd., u.t. 59 yrs., g.r. 12*l.*, e.r. 60*l.* | 900 |
| 100, Talbot-rd., u.t. 59 yrs., g.r. 13*l.*, r. 75*l.* | 490 |

February 8.—By TOOTELL & SONS (at Maidstone).

| | |
|---|---|
| Sutton Valence, Kent.—North-st., four freehold cottages | 200 |

By STEPHENSON & ALEXANDER (at Cardiff).

| | |
|---|---|
| Mynyddyallwyn, Monmouth.—A moiety of the minerals underlying Coed-Cae Newydd Farm, 12 a. 0 r. 31 p., f. | 110 |
| A moiety of the minerals underlying Coed-y-Presciad Farm and Caeau Rigby Fields, 43 a. 2 r. 6 p., f. | 630 |
| One-third share of the minerals underlying Trescoed Farm, 23 a. 2 r. 30 p., f. | 800 |
| One-third share of the minerals underlying Upper and Lower Ynysddu and Tycoppi, 188 a. 1 r. 16 p., f. | 2,000 |
| Bedwellty, Monmouth.—Three-fourths of the minerals underlying Place Farm, 178 a. 2 r. 23 p., f. | 3,350 |

February 9.—By COOK & BIRMINGHAM (at Exeter).

| | |
|---|---|
| Witheridge, Devon.—Lower Queen Dart Farm, 111 a. 1 r. 6 p., f. | 2,350 |

February 12.—By WALTER LUDLOW & BRISCOE (at Birmingham).

| | |
|---|---|
| Edgbaston, Warwick.—186, Hagley-rd., u.t. 51 yrs., g.r. 11*l.* 8s. 9d. | 3,000 |

February 13.—By FREDERICK WARMAN.

| | |
|---|---|
| Clerkenwell.—8, Red Lion-st., f., e.r. 141*l.* | 2,000 |
| Highbury.—105, Highbury-quadrant, u.t. 49¾ yrs., g.r. 13*l.* 13s. | 570 |

February 14.—By G. PEARCE & SONS.

| | |
|---|---|
| Hackney-rd.—23 and 27, Dove-row, f. | £725 |
| February 15.—By LINNETT & LANE. | |
| Battersea.—11 and 13, Currie-rd., f. | 680 |
| Tottenham.—54 and 56, Vicarage-rd., f. | 630 |
| By H. J. BLISS & SONS. | |
| Bethnal Green.—108 to 116 (even), Treadway-st., u.t. 36½ yrs., g.r. 20*l.* | 1,000 |
| Bow.—30, Addington-rd., u.t. 45½ yrs., g.r. 10s., r. 37*l.* | 450 |
| 34 and 36, Addington-rd., u.t. 46 yrs., g.r. 12*l.*, r. 72*l.* | 700 |
| Old Ford.—70, Ellesmere-rd., f. | 440 |
| Cardigan-rd., f.g.r. 3*l.* 10s., reversion in 64 yrs. | 110 |
| Kensington.—26, Porten-rd., u.t. 65 yrs., g.r. 7*l.* 10s., r. 32*l.* | 285 |
| By WAGSTAFF & SONS. | |
| Barnsbury.—12, Thornhill-cres., u.t. 49 yrs., g.r. 8*l.*, e.r. 50*l.* | 475 |
| 3 and 5, Barnsbury-gr., u.t. 64 yrs., g.r. 12*l.* 12s. | 500 |
| Hoxton.—66, Buckland-st., u.t. 34½ yrs., g.r. 5*l.* 5s., e.r. 35*l.* | 370 |
| Brighton, Sussex.—25, 27, and 31, York-rd., u.t. 32½ yrs., g.r. 27*l.* 4s. 6d., r. 185*l.* | 1,910 |
| February 16.—By T. B. WESTACOTT. | |
| Camden Town.—165 and 167, Great College-st., r. 105*l.*, g.r. 24*l.*; also i.g.r. 20*l.*, u.t. 39 yrs., g.r. 32*l.* | 1,000 |
| 39, 41, 43, and 45, Caroline-st., u.t. 22½ yrs., g.r. 16*l.*, r. 158*l.* 8s. 8d. | 740 |
| Shoreditch.—8, 12, and 20, Holywell-row, f., r. 144*l.* 14s. | 2,280 |
| Finsbury Park.—46, Finsbury Park-rd., u.t. 66 yrs., g.r. 9*l.* 9s., e.r. 48*l.* | 575 |
| 6, Gillespie-rd., u.t. 71 yrs., g.r. 10*l.*, r. 32*l.* | 245 |

*Contractions used in these lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard.

## PRICES CURRENT OF MATERIALS:

### WOOD.*

Per Petersburg standard hundred.

| | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| White Sea: first yellow deals | 18 | 0 | 0 | 23 | 10 | 0 |
| Second do. | 16 | 0 | 0 | 18 | 0 | 0 |
| Third do. | 13 | 10 | 0 | 15 | 0 | 0 |
| Battens, 40s., 30s., and 15s. less respectively. | | | | | | |
| Petersburg: first yellow deals | 15 | 0 | 0 | 17 | 10 | 0 |
| Second do. | 12 | 10 | 0 | 13 | 10 | 0 |
| Battens, 30s. and 20s. less respectively. | | | | | | |
| Petersburg, white deals | 11 | 10 | 0 | 14 | 0 | 0 |
| Do. white battens | 9 | 10 | 0 | 11 | 0 | 0 |
| Riga, white deals | 9 | 10 | 0 | 10 | 10 | 0 |
| Swedish mixed yellow deals | 16 | 0 | 0 | 21 | 0 | 0 |
| Third do. | 14 | 0 | 0 | 17 | 0 | 0 |
| Fourth do. | 12 | 10 | 0 | 13 | 10 | 0 |
| Fifth do. | 11 | 10 | 0 | 12 | 10 | 0 |
| Battens, 30s., 20s., and 10s. less respectively. | | | | | | |
| Whitewood, 10 to 20 per cent. less. | | | | | | |
| Finnish unsorted yellow deals | 11 | 0 | 0 | 11 | 10 | 0 |
| Battens, 10s. and 5s. less respectively. | | | | | | |
| Whitewood, 5 to 10 per cent. less. | | | | | | |
| Norwegian second yellow battens | 8 | 0 | 0 | 8 | 10 | 0 |
| Third do. | 7 | 15 | 0 | 8 | 0 | 0 |
| Fourth do. | 7 | 10 | 0 | 7 | 15 | 0 |
| Whitewood, 10s. less. | | | | | | |
| Danzig, Crown Deck deals, per 40 ft. 3 in. | 0 | 15 | 0 | 1 | 5 | 0 |
| Brack | 0 | 12 | 0 | 1 | 0 | 0 |
| St. Lawrence Pine deals, &c., per P.S.H.:— | | | | | | |
| 1st, Bright and Dry, regular sizes | 20 | 0 | 0 | 27 | 0 | 0 |
| " " oddments | 13 | 0 | 0 | 21 | 0 | 0 |
| 2nd " regular sizes | 15 | 0 | 0 | 17 | 10 | 0 |
| " " oddments | 10 | 0 | 0 | 14 | 0 | 0 |
| 3rd " regular sizes | 9 | 10 | 0 | 11 | 0 | 0 |
| " " oddments | 8 | 0 | 0 | 9 | 10 | 0 |
| 4th " regular sizes | 8 | 10 | 0 | 9 | 10 | 0 |
| " " oddments | 7 | 10 | 0 | 9 | 0 | 0 |
| St. Lawrence Spruce deals, &c. | | | | | | |
| First, regular sizes | 10 | 0 | 0 | 12 | 10 | 0 |
| Second " | 9 | 15 | 0 | 10 | 5 | 0 |
| Third " | 9 | 5 | 0 | 9 | 15 | 0 |
| Fourth " | 8 | 15 | 0 | 9 | 5 | 0 |
| Oddments and battens at 20s., 10s., 7s. 6d., and 5s. less respectively. | | | | | | |
| New Brunswick Spruce deals, &c. | 9 | 0 | 0 | 10 | 0 | 0 |
| Oddments, battens, and fourths | 8 | 15 | 0 | 9 | 5 | 0 |
| United States pitch pine planks and boards | 10 | 10 | 0 | 15 | 0 | 0 |
| Prepared Boards, per square | | | | | | |
| 1¼ by 6½ and 7 in. 1st yellow | | 11 | 0 | | 16 | 0 |
| " " 2nd " | | 10 | 6 | | 12 | 6 |
| 1 by 6½ and 7 in. 1st " | | 10 | 0 | | 11 | 6 |
| " " " white | | 8 | 6 | | 9 | 6 |
| " " 2nd yellow | | 8 | 6 | | 10 | 6 |
| " " " white | | 7 | 6 | | 8 | 6 |
| ¾ by 6½ & 7 in. 1st & 2nd yellow | | 7 | 9 | | 9 | 6 |
| " " " white | | 7 | 6 | | 8 | 6 |
| ¾ by 6½ and 7 in. 1st yellow and white (grooved, tongued, and beaded) | | 8 | 6 | | 9 | 6 |
| ¾ by 6½ and 7 in. 2nd yellow and white (ditto) | | 7 | 6 | | 8 | 6 |
| ¾ by 6½ and 7 in. 1st yellow and white (ditto) | | 6 | 6 | | 7 | 6 |
| ¾ by 6½ and 7 in. 2nd yellow and white (ditto) | | 6 | 0 | | 7 | 0 |
| Narrower widths at 10 per cent. less. 3rd quality at 15 per cent. less than 2nd. | | | | | | |
| Dantzig and Memel Fir Timber— per load | | | | | | |
| Best middling | 3 | 15 | 0 | 4 | 0 | 0 |

* The prices named are for the wood as imported and landed in the docks. Ten per cent., approximately, should be added in order to arrive at the current trade prices.

## PRICES CURRENT (*Continued*).

| | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| Good middling and Second | 3 | 5 | 0 | 3 | 10 | 0 |
| Common middling | 3 | 0 | 0 | 3 | 5 | 0 |
| Undersized | 3 | 0 | 0 | 3 | 5 | 0 |
| Swedish and Norwegian Balks | 2 | 10 | 0 | 2 | 15 | 0 |
| Baltic Oak Timber— | | | | | | |
| Danzig and Stettin—Large | 3 | 10 | 0 | 4 | 15 | 0 |
| Small | 2 | 10 | 0 | 3 | 10 | 0 |
| Quebec Timber per load | | | | | | |
| Yellow Pine | 5 | 0 | 0 | 6 | 10 | 0 |
| Oak | 4 | 15 | 0 | 6 | 15 | 0 |
| Elm | 4 | 5 | 0 | 4 | 10 | 0 |
| Ash | 3 | 10 | 0 | 4 | 5 | 0 |
| Birch | 3 | 7 | 6 | 5 | 15 | 0 |
| New Brunswick, &c., Birch | 3 | 2 | 6 | 3 | 12 | 6 |
| American Pitch Pine Timber | 3 | 17 | 6 | 4 | 10 | 0 |
| Wainscot, per log, 18 cubic ft.— | | | | | | |
| Crown (Eng. & Dutch) nominal | 3 | 10 | 0 | 4 | 12 | 6 |
| Brack nominal | 2 | 15 | 0 | 3 | 15 | 0 |
| Lathwood, per cubic fathom— | | | | | | |
| Petersburg | 4 | 0 | 0 | 6 | 10 | 0 |
| Riga and Danzig | 4 | 10 | 0 | 5 | 10 | 0 |
| Norway Poles, per ft. run | 0 | 0 | 1 | 0 | 0 | 1½ |
| Oak Staves, per mille full size pipe | | | | | | |
| Memel, Crown | 220 | 0 | 0 | 230 | 0 | 0 |
| Brack | 190 | 0 | 0 | 200 | 0 | 0 |
| Danzig | 165 | 0 | 0 | 175 | 0 | 0 |
| Bosnia, single Barrel (nominal) | 28 | 0 | 0 | 30 | 0 | 0 |
| United States, Pipe | 37 | 10 | 0 | 43 | 0 | 0 |
| Hogshead, extra heavy and double extra | 32 | 0 | 0 | 35 | 0 | 0 |
| Indian Teake per load | 11 | 0 | 0 | 16 | 10 | 0 |
| British Guiana Greenheart | 0 | 0 | 0 | 8 | 0 | 0 |
| Mahogany, per foot superficial— | | | | | | |
| Honduras, cargo average | 0 | 0 | 4½ | 0 | 0 | 5½ |
| Nicaragua, do. | 0 | 0 | 4½ | 0 | 0 | 5½ |
| Tabasco, do. | 0 | 0 | 4½ | 0 | 0 | 6½ |
| Mexican, do. | 0 | 0 | 4 | 0 | 0 | 4½ |
| Panama, do. | 0 | 0 | 3½ | 0 | 0 | 4 |
| African, do. | 0 | 0 | 3½ | 0 | 0 | 5 |
| Cuba, do. | 0 | 0 | 6 | 0 | 0 | 8 |
| St. Domingo, do. | 0 | 0 | 5 | 0 | 0 | 7½ |
| Do. Curls (good to prime) | 0 | 0 | 9 | 0 | 1 | 3 |
| Walnut, American (logs) | 0 | 2 | 6 | 0 | 5 | 0 |
| Do. do. (planks and boards) | 0 | 2 | 0 | 0 | 7 | 6 |
| Italian, per foot superficial | 0 | 0 | 3 | 0 | 0 | 7½ |
| Black Sea, per ton | 6 | 0 | 0 | 12 | 0 | 0 |
| Satin Walnut (logs) per foot cube | 0 | 1 | 0 | 0 | 1 | 6 |
| " (planks and boards) | 0 | 1 | 9 | 0 | 3 | 0 |
| Sequoia (Californian redwood), per foot cube | 0 | 1 | 9 | 0 | 2 | 0 |
| Whitewood, American (logs) | 0 | 1 | 4 | 0 | 1 | 9 |
| " " (planks and boards) | 0 | 1 | 9 | 0 | 2 | 9 |
| Quartered oak " " | 0 | 2 | 3 | 0 | 4 | 0 |
| Kauri pine (logs) | 0 | 1 | 9 | 0 | 2 | 0 |
| " " (planks) | 0 | 2 | 3 | 0 | 2 | 9 |
| Jarrah (planks) | 0 | 2 | 0 | 0 | 2 | 3 |
| Lancewood spars each, fresh and large | 0 | 5 | 0 | 0 | 7 | 6 |
| Lancewood spars, ordinary to fair | 0 | 3 | 0 | 0 | 4 | 0 |
| Degame spars | 0 | 8 | 0 | 0 | 10 | 0 |

### METALS.

| | | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| IRON—Pig, in Scotland | ton | 3 | 8 | 11 | 0 | 0 | 0 |
| Bar, Welsh, in London | | 9 | 0 | 0 | 9 | 15 | 0 |
| Do. do. at works in Wales | | 8 | 10 | 0 | 9 | 0 | 0 |
| Do. Staffordshire, in London | | 9 | 15 | 0 | 11 | 15 | 0 |
| COPPER—British cake and ingot | | 78 | 5 | 0 | 78 | 15 | 0 |
| Best selected | | 79 | 5 | 0 | 80 | 0 | 0 |
| Sheets, strong | | 84 | 0 | 0 | 85 | 0 | 0 |
| Chili bars | | 74 | 17 | 6 | 0 | 0 | 0 |
| YELLOW METAL | lb. | | 6¾d. | | | 7d. | |
| LEAD—Pig | | | | | | | |
| Spanish | ton | 16 | 15 | 0 | 0 | 0 | 0 |
| English Com. Brands | | 16 | 17 | 6 | 0 | 0 | 0 |
| Sheet, English, 6 lbs. per sq. ft. and upwards | | 18 | 7 | 6 | 0 | 0 | 0 |
| Pipe | | 18 | 17 | 6 | 0 | 0 | 0 |
| ZINC—English sheet | ton | 27 | 0 | 0 | 0 | 0 | 0 |
| Vieille Montagne | | 28 | 10 | 0 | 0 | 0 | 0 |
| Spelter | | 21 | 17 | 6 | 22 | 0 | 0 |
| TIN—Straits | | 145 | 0 | 0 | 0 | 0 | 0 |
| Australian | | 145 | 0 | 0 | 145 | 10 | 0 |
| English Ingots | | 149 | 0 | 0 | 150 | 0 | 0 |
| Banca | | 0 | 0 | 0 | 0 | 0 | 0 |
| Billiton | | 0 | 0 | 0 | 0 | 0 | 0 |

### OILS.

| | | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| Linseed | ton | 24 | 5 | 0 | 0 | 0 | 0 |
| Cocoanut, Cochin | | 29 | 15 | 0 | 0 | 0 | 0 |
| Do. Ceylon | | 26 | 15 | 0 | 0 | 0 | 0 |
| Palm, Lagos | | 27 | 10 | 0 | 0 | 0 | 0 |
| Rapeseed, English, pale | | 27 | 0 | 0 | 0 | 0 | 0 |
| Do. Brown | | 25 | 10 | 0 | 0 | 0 | 0 |
| Cottonseed ref. | | 19 | 10 | 0 | 20 | 0 | 0 |
| Oleine | | 17 | 5 | 0 | 19 | 5 | 0 |
| Lubricating U.S. | | 0 | 8 | 0 | 0 | 0 | 0 |
| Do. Black | | 0 | 7 | 6 | 0 | 0 | 0 |
| TAR—Stockholm | barrel | 1 | 6 | 6 | 0 | 0 | 0 |
| Archangel | | 1 | 0 | 0 | 0 | 0 | 0 |
| Turpentine | | 40 | 5 | 0 | 0 | 0 | 0 |

### BRICKS, &c.

| | s. | d. | | | | |
|---|---|---|---|---|---|---|
| Hard Stocks | 32 | 0 | per thousand alongside, in river. | | | |
| Rough Stocks and Grizzles | 32 | 0 | " | " | " | " |
| Smooth Bright Facing Stocks | 58 | 0 | " | " | " | " |
| Shippers | 42 | 0 | " | " | " | " |
| Flettons | 30 | 0 | " | " | at railway depôt. | |
| Red Wire Cuts | 34 | 0 | " | " | " | " |
| Best Fareham Red | 71 | 6 | " | " | " | " |
| Best Blue Pressed Staffordshire | 86 | 0 | " | " | " | " |
| Best Stourbridge Fire Bricks | 84 | 0 | " | " | " | " |
| Best White Glazed Stretchers | 260 | 0 | " | " | " | " |
| Headers | 240 | 0 | " | " | " | " |
| Quoins and Bull-nose | 340 | 0 | " | " | " | " |
| Double Headers | 320 | 0 | " | " | " | " |
| Best Dipped Salt Glazed Stretchers and Headers | 240 | 0 | " | " | " | " |
| Quoins and Bull-nose | 260 | 0 | " | " | " | " |

## PRICES CURRENT (*Continued*).

| | | | | |
|---|---|---|---|---|
| Double Headers | 280 | 0 | per thousand at railway depôt. | |
| Seconds Quality White and Dipped | | | | |
| Salt Glazed | 40 | 0 | per thousand less than best. | |
| | | s. | d. | |
| Thames and Pit Sand | | 7 | 0 | per yard, delivered. |
| Thames Ballast | | 6 | 6 | " " |
| Best Portland Cement | | 34 | 0 | per ton " |
| Best Ground Blue Lias Lime | | 23 | 0 | " " |

NOTE.—The cement and lime is exclusive of the ordinary charge for sacks.

| | |
|---|---|
| Grey Stone Lime | 12s. 0d. per yard, delivered. |
| Stourbridge Fire-clay in sacks, 31s. 6d. per ton at rly. dpt | |

### STONE.

| | s. | d. | |
|---|---|---|---|
| Ancaster in blocks | 2 | 0 | per ft. cube, deld. rly. depôt. |
| Bath " | 1 | 7 | " " |
| Beer " | 1 | 6½ | " " |
| Grinshill " | 1 | 10 | " " |
| Brown Portland in blocks | 2 | 2 | " " |
| Darley Dale " | 2 | 1 | " " |
| Red Corsehill " | 2 | 5 | " " |
| Red Mansfield " | 2 | 4½ | " " |
| Hard York " | 2 | 10 | " " |
| " " 6 in. sawn both sides landings, to sizes (under 40 ft. sup.) | 2 | 7 | per ft. super. at rly. depôt. |
| " " 6 in. Rubbed Ditto | 2 | 10½ | " " |
| " " 3 in. sawn both sides slabs (random sizes) | 1 | 3 | " " |
| " " 3 in. self-faced Ditto | 0 | 9 | " " |

### TILES.

| | s. | d. | |
|---|---|---|---|
| Best plain red roofing tiles | 40 | 6 | per 1,000 at rly. depôt. |
| Hip and valley tiles | 3 | 6 | per doz. " " |
| Best Broseley tiles | 47 | 6 | per 1,000 " " |
| Hip and valley tiles | 4 | 0 | per doz. " " |

### SLATES.

| | | £ | s. | d. | |
|---|---|---|---|---|---|
| 20×10 | best blue Bangor | 11 | 5 | 0 | per 1000 of 1200 at ry. dep. |
| " | best seconds " | 10 | 15 | 0 | " " |
| 16× 8 | best " | 6 | 2 | 6 | " " |
| 20×10 | best blue Portmadoc | 10 | 18 | 0 | " " |
| 16× 8 | " " | 6 | 0 | 0 | " " |
| 20×10 | best Eureka unfading green | 11 | 2 | 6 | " " |
| 16× 8 | " " | 6 | 15 | 0 | " " |
| 20×10 | Permanent green and Sedan green | 10 | 0 | 0 | " " |
| 16× 8 | " " | 5 | 12 | 6 | " " |

## TO CORRESPONDENTS.

G. H. L. (Below our limit). T. M. G. (Too late; next week).

NOTE.—The responsibility of signed articles, letters, and papers read at meetings, rests, of course, with the authors.

*We cannot undertake to return rejected communications.*

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article is given subject to the approval of the article, when written, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

## TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under £100, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

BICKLEY (Salop).—For the execution of water supply works, for the Malpas Rural District Council. Mr. J. Aldersey Davenport, C.E., 152, Hospital-street, Nantwich:—

*For Cast-iron Mains, &c.*

Cochrane & Co. ..... On schedule of prices. 4-in. pipes £7 10s. per ton.

*For Laying Mains.*

J. T. Gresty, Willaston, near Nantwich* ..... £436

*For Hydrants, Valves, and Fittings.*

Glenfield & Kennedy, Kilmarnock* .. On schedule of prices.

*For Communication Pipes.*

J. T. Gresty, Willaston, near Nantwich* .. On schedule of prices.

CLONMEL (Ireland).—For the erection of artisans dwellings, for the Corporation:—

Neil Boles, Mary-street, Clonmel,* eighteen labourers' cottages, Dungarvan-road .... £2,070

Cleary & Sons, Upper Gladstone-street, Clonmel,* five artisans' dwellings, Dillon-street ..... £1,075

[*See also page 199.*]

# COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

*(For some Contracts, &c., still open, but not included in this List, see previous issues.)*

## COMPETITIONS.

| Nature of Work. | By whom Advertised. | Premiums. | Designs to be delivered |
|---|---|---|---|
| *Accident and General Hospital | Cameron Hospital Committee | 100*l.*; 50*l.* | April 11 |
| *Hospital | Glasgow Parish Council | 150*l.*; 100*l.*; 50*l.* | No date |

## CONTRACTS.

| Nature of Work or Materials. | By whom Required. | Forms of Tender, &c., Supplied by | Tenders to be delivered |
|---|---|---|---|
| Street Works, Mulgrave-road, &c. | West Hartlepool Corporation | J. W. Brown, Borough Engineer, Town Hall | Feb. 27 |
| Additions to School, Elgin, N.B. | | Reid & Wittet, Architects, Elgin | do. |
| Additions to Schools, Daltry-street | Hull School Board | Botterill & Co., Architects, 23, Parliament-street, Hull | do. |
| Additions to Convent, Mallow, Ireland | | S. F. Hynes, Architect, 21, South Mall, Cork | do. |
| Oak Pale Fencing, &c., Edred-road | Dover Town Council | H. E. Stillgoe, Civil Engineer, Town Hall | do. |
| Building Materials, Thorpe | Norfolk County Asylum Visitors | P. E. Hansell, The Close, Norwich | do. |
| Granite and Slag | Nottinghamshire County Council | E. P. Hooley, Shire Hall | do. |
| Asphalting Footpaths, &c., Hartburn | Stockton R.D.C. | W. Burton, Surveyor, Billingham | do. |
| Cottage, Dunster Station, Somerset | Great Western Railway Co. | G. K. Mills, Paddington Station, W. | do. |
| Alterations to Workhouse Infirmary | Belfast Guardians | Young & Mackenzie, Engr., Scottish Provident Buildings, Belfast | do. |
| *Making-up Walters' Yard, Bromley | Bromley U.D.C. | Surveyor, Council Offices, Bromley, Kent | do. |
| *Puddling and Making Pond Water-tight, Clapton | Hackney Vestry | Chief Surveyor, Town Hall, Mare-street, N.E. | Feb. 28 |
| *Stores and Materials | Plumstead Vestry | Engineer, Vestry Hall, Maxey-road, Plumstead | do. |
| Brick Bridge, Rochford | Essex County Council | P. J. Sheldon, Civil Engineer, Duke-street, Chelmsford | do. |
| Sewage Disposal Tank, &c., Rostrevor | Great Northern Rly. Co. (Ireland) | Mr. Peddie, C.E., Scottish Provident Buildings, Belfast | do. |
| Flags, Kerbs, &c. | Wardle (Lancs.) U.D.C. | V. Wilson, Surveyor, Council Offices, Wardle | do. |
| Private Street Works, Riley-road, &c. | Enfield U.D.C. | R. Collins, Court House, Enfield | do. |
| Road Works | Erdington U.D.C. | H. H. Humphries, Engineer, Public Hall, Erdington | do. |
| Granite, &c. | Litherland (Lancs.) U.D.C. | W. B. Garton, Surveyor, 25, Sefton-road, Litherland | do. |
| Whinstone (400 tons) | Larne (Ireland) U.D.C. | W. Pinkerton, Surveyor, Town Hall | do. |
| Street Works, Bismarck-street | Oswaldtwistle (Lancs.) Corporation | R. N. Hunter, Surveyor, Town Hall | do. |
| Sea Wall, Wern, Llandonna | | J. Owen, Architect, Menai Bridge, North Wales | do. |
| Offices, Dyce, Aberdeen, N.B. | Messrs. John Milne & Co., Ltd. | Jenkins & Marr, Civil Engineer, 16, Bridge-street, Aberdeen | do. |
| Keeper's House, Talla Reservoir | Edinburgh Water Trustees | Leslie & Reid, Civil Engineer, 72A, George-street, Edinburgh | do. |
| Workmen's Houses, Talla | do. | do. | do. |
| *Making-up Roads | Fulham Vestry | Surveyor, Town Hall, Walham Green, S.W. | do. |
| *Engine Pump, &c., also Laundry and Ward Fittings | Basingstoke Guardians | See Advertisement | do. |
| Street Works, Avenue-road, &c. | Leigh-on-Sea U.D.C. | F. E. Smee, Surveyor, 12, West Smithfield, E.C. | Mar. 1 |
| Street Works, Newsome-street, &c. | Bolton Town Council | W. Marsden, Surveyor, Town Hall | do. |
| Retort House | Aberdare Gas Co. | Stevenson & Birstal, Engineers, 38, Parliament-street, S.W. | do. |
| *Underground Conveniences | Ealing U.D.C. | Engineer, Public Buildings, Ealing, W. | do. |
| Alterations to Business Premises, High-street | Daventry Co-operative Society | Secretary, Society's Offices, High-street, Daventry | Mar. 2 |
| Waterworks, Findochty | Banff District Committee | J. Barron, Civil Engineer, 1, Bon Accord-street, Aberdeen | do. |
| Drainage Works, East Kilbride | Lanark County Council | W. L. Douglass, Civil Engineer, 3, Clydesdale-street, Hamilton | do. |
| Steam Piping, &c. | Sunderland Corporation | J. F. C. Snell, Civil Engineer, Dunning-street, Sunderland | do. |
| *Pulling-down Old Building | St. George-in-the-East Guardians | G. A. Wilson, Vestry Hall, Cable-street, E. | do. |
| *Hartshill Granite | Thame R.D.C. | District Surveyor, Thame | Mar. 3 |
| Surveyor's Materials | Headington R.D.C. | L. Turner, Surveyor, New Headington, Oxon | do. |
| Church Hall, Aboyne, N.B. | | Jenkins & Marr, Civil Engineers, 16, Bridge-street, Aberdeen | do. |
| *Four Blocks of Schools | Hendon School Board | G. E. T. Lawrence, Architect, 22, Buckingham-street, W.C. | do. |
| *Hospital Extension | Coventry Corporation | City Engineer, St. Mary's Hall, Coventry | Mar. 5 |
| *Works and Materials | Hendon U.D.C. | Engineer and Surveyor, Council Offices, Hendon, N.W. | do. |
| *Drainage Works, Mill Hill | | Pollard & Tingle, 31, Old Queen-street, Westminster | do. |
| Culverts, &c., Great Bentley | Clacton U.D.C. | Taylor, Sons, & Co., Civil Engineers, 27, Great George-street, S.W | do. |
| Portland Cement, Lime, &c. | Thames Ditton U.D.C. | A. J. Henderson, Civil Engineer, Brabant Villa, Thames Ditton | do. |
| Road Stone, Wrexham | Denbighshire County Council | E. W. Jones, Surveyor, Wrexham | do. |
| Drainage Works, Heswall, Cheshire | Wirral R.D.C. | A. Hughes, Surveyor, Council Offices, Wirral | do. |
| Sewers | Shifnal R.D.C. | R. E. W. Berrington, Engineer, Bank Buildings, Wolverhampton | do. |
| Stores, Belfast | Great Northern Rly. Co. (Ireland) | T. Morrison, Amiens-street Terminus, Dublin | do. |
| Additions to St. Peter's Hospital | Bristol Union Guardians | W. S. Skinner, Architect, Baldwin-street, Bristol | do. |
| School, near Sheffield | Clowne School Board | Rollinson & Son, Architects, 13, Corporation-street, Chesterfield | do. |
| *Paving, Kerbing, Channelling, &c. | Leyton U.D.C. | Surveyor, Town Hall, Leyton | Mar. 6 |
| *Works and Materials | do. | do. | do. |
| Reservoir, &c. | Westbury (Wilts.) R.D.C. | W. H. Stanley, Civil Engineer, Trowbridge | do. |
| Portland Cement, Road Stone, &c. | Bath Corporation | C. R. Fortune, City Surveyor, Guildhall, Bath | do. |
| *Maintenance and Repair of Main Roads | Kent County Council | County Surveyor, 86, Week-street, Maidstone | do. |
| *Sewerage Works | Plymouth Corporation | See Advertisement | Mar. 7 |
| *Coal and Coke—Uniforms | Westminster Vestry | Surveyor, Town Hall, Westminster, S.W. | do. |
| *Making-up Cottingham-road, Penge | Lewisham Board of Works | Surveyor's Department, Town Hall, Catford, S.E. | do. |
| *Making-up Radford-road, Hither Green | do. | do. | do. |
| *Wood Paving | Greenwich Board of Works | 141, Greenwich-road, Greenwich | do. |
| *Road Making and Paving Works | do. | do. | do. |
| Steel Rails (1,900 tons) | Durban (Natal) Corporation | Webster, Steel, & Co., 5, East India-avenue, E.C. | Mar. 8 |
| *Furnishing Schools | Halifax School Board | Offices of the Board, 22, Union-street, Halifax | Mar. 9 |
| *Works and Materials | Hornsey U.D.C. | Engineer, Council's Offices, Southwood-lane, Highgate, N. | Mar. 12 |
| *Paving Beckenham-road | Beckenham U.D.C. | Surveyor, Council's Offices, Beckenham | do. |
| School | South Normanton School Board | R. C. & E. R. Sutton, Architects, Angel-row, Nottingham | do. |
| Sewers, Cottage, &c. | Cheadle U.D.C. | E. Sykes, Civil Engineer, 9, High-street, Cheadle | do. |
| *Pavilion, Iron Bandstand, Lodges, Iron Fencing | Ilford U.D.C. | H. Shaw, 7, Cranbrook-road, Ilford | do. |
| *Workmen's Dwellings | Barnes U.D.C. | Engineer, Council's Offices, Mortlake, S.W. | Mar. 13 |
| *Iron and Steel Roof | Southport Corporation | Borough Engineer, Southport | do. |
| *Cupboards, Racks, &c., Grove Hospital, Tooting | Metropolitan Asylums Board | Office of the Board, Norfolk House, Norfolk-street, Strand, W.C. | Mar. 14 |
| Depot Buildings, &c., St. Mary's-road | Luton Town Council | G. Sell, Town Hall | Mar. 15 |
| *Sludge Pressing Plant | Ealing U.D.C. | Engineer, Public Buildings, Ealing, W. | do. |
| Public Baths | Wrexham Town Council | Borough Surveyor, Guildhall, Wrexham | Mar. 19 |
| Extension of Market | do. | do. | do. |
| *Repairs and Materials | War Department | Head Quarter Offices, Stanhope Lines, Aldershot | No date |
| *Works, Repairs, and Materials | do. | See Advertisement | do. |
| *Business Premises, Bakery and Stables | Aylesbury Co-operative Soc., Ltd. | The Society's Offices, High-street, Aylesbury | do. |
| *Blinds, &c. | Little Ilford School Board | J. S. Appleton, 769, Romford-road, Manor Park, Essex | do. |
| Steam Laundry, &c., Green Lanes, Tottenham | | E. Taylor, Engineer, 99, Fonthill-road, Finsbury Park, N. | do. |
| Church Hall, &c., West Jesmond, Newcastle | | W. H. Knowles, Architect, 37, Grainger-street, Newcastle | do. |
| Granite (10,000 tons) | Gainsborough R.D.C. | R. Maxwell, Surveyor, Lee-road, Gainsborough | do. |
| Sewage Outfall Works | Malling R.D.C. | Professor H. Robinson, 13, Victoria-street, S.W. | do. |
| Water Mains, Atherstone | | J. A. Knight, Oldberry Hall, Atherstone | do. |
| House, Distington, near Workington | | J. Brown, Furnace-road, Distington | do. |
| Hartshill Stone (3,200 tons) | Abingdon R.D.C. | B. & E. M. Challenor, 59, Stert-street, Abingdon | do. |
| Cast-iron Pipes, Margate | Isle of Thanet Gas Company | J. Dougall, Engineer, Gas Offices, Margate | do. |

## PUBLIC APPOINTMENTS.

| Nature of Appointment. | By whom Advertised. | Salary. | Application to be in |
|---|---|---|---|
| *Second Draughtsman and Engineering Draughtsman | Bristol Sanitary Committee | 160*l.* and 100*l.* per annum | Feb. 23 |
| *Architectural Assistant, also a Surveyor | London County Council | See Advertisement | Mar. 1 |
| *Inspecting Foreman | Minster R.D.C. | 3*l.* 3*s.* per week | Mar. 3 |
| *Clerk of Works | do. | 3*l.* 3*s.* per week | do. |
| *Building Inspectors (two) | Tottenham U.D.C. | 150*l.* per annum | Mar. 5 |
| *Clerk of Works | West Ham Guardians | 5*l.* 5*s.* per week | Mar. 7 |

*Those marked with an asterisk (*) are advertised in this Number.* *Competitions, p.* iv. *Contracts, pp.* iv. vi. viii, ix. x, *& xxi, Public Appointments, pp.* xix *& xxi.*

CRAIL (N.B.).—For the construction of sewers and water-mains, for the Commissioners. Messrs. Belfrage & Carfrae, C.E., 1, Erskine-place, Edinburgh :—

| | | | |
|---|---|---|---|
| Nicolson & Gibson | £1,007 13 7 | A. Fraser, jun. | £750 0 0 |
| Walker & Son | 928 8 10 | R. Marshall .. | 688 5 5 |
| Brebner & Co. | 801 7 7 | W. Caragher.. | 676 12 1 |
| G. Dick ..... | 790 0 0 | J. Martin, Dunfermline*. | 597 14 1 |
| Mackay & Son | 755 17 2 | | |

EXMOUTH.—For alterations at Donnington, Littleham Valley, for Mr. H. J. Cameron. Mr. Ernest E. Ellis, architect, Exmouth :—

| | | | |
|---|---|---|---|
| T. Abell..... | £243 18 7 | W. H. Perry* .. | £182 0 0 |
| G. Hooper .... | 195 0 0 | | |

EXMOUTH.—For detached villa, Salterton-road. Mr. Ernest E. Ellis, architect, Exmouth :—

| | | | |
|---|---|---|---|
| H. Dart..... | £1,000 | A. Hayman* ..... | £900 |
| G. Hooper..... | 990 | W. J. Stokes ..... | 820 |

[Exclusive of road, &c.]

EXMOUTH.—For additions at Castle Park Cottage, for Mr. J. J. Bastin. Mr. Ernest E. Ellis, architect, Exmouth :—

| | | | |
|---|---|---|---|
| Cooper & Son.. | £358 0 0 | W. H. Perry .. | £320 0 0 |
| W. J. Stokes .. | 356 0 0 | H. Dart* ..... | 320 0 0 |
| H. J. Gay-Lang | 355 14 0 | R. Cooper .... | 319 0 0 |
| F. Grace ..... | 347 11 6 | | |

FARNHAM.—For draining, kerbing, &c., Park-road, for the Urban District Council. Mr. R. W. Cass, Surveyor, Council Offices, Farnham :—

*St. Cross Estate.*

W. H. Saunders, Southampton ..... £236 0 0

*Park-roads, W.*

W. Norris, Farnham..... £395 9 5

GOMERSAL (Yorks.).—For the construction of earthenware pipe sewers (4,000 yds.), &c., for the Urban District Council. Mr. John Waugh, C.E., Sunbridge Chambers, Bradford. Quantities by Engineer :—

| | | | |
|---|---|---|---|
| Thos. Egan & Sons | £6,852 | Wm. Binns ..... | £5,590 |
| Parker & Sharp .... | 6,637 | Wm. Brigg, Frizinghall, Bradford* .. | 5,224 |
| Wm. Waring & Son | 6,300 | Morley & Barker .. | 5,223 |
| J. Bentley..... | 6,140 | C. Metcalfe ..... | 5,222 |
| G. Pearson ..... | 5,965 | | |
| W. & J. Foster .... | 5,608 | | |

HEATON PARK (near Manchester).—For the extension of club premises, for the Heaton Park Liberal Club Building Company, Limited. Messrs. Maxwell & Tuke, architects, Manchester :—

| | | | |
|---|---|---|---|
| Peters & Sons ..... | £1,175 | J. Bland..... | £1,059 |
| Bullivant & Sons.... | 1,070 | J. Leach & Sons.... | 1,058 |
| Jackson & Sons .... | 1,070 | G. Willison, Heaton Park*..... | 1,048 |

LONDON.—For the rebuilding of No. 288, Edgware-road, W., for Mr. James Chambers. Mr. Eugene C. Beaumont, architect, 78, Fleet-street, E.C. Quantities by Mr E. J. Gee, 30, Eldon-street, Finsbury :—

| | | | |
|---|---|---|---|
| Holliday & Greenwood | £4,077 | Cadman & Son..... | £3,749 |
| Grover & Son..... | 3,933 | Patman & Fothering-ham* ..... | 3,741 |
| Henry Brown..... | 3,877 | Simpson & Son..... | 3,690 |
| George Neal ..... | 3,764 | | |

LONDON.—For shop fittings at No. 288, Edgware-road, W., for Mr. L. Alexander. Mr. Eugene C. Beaumont, architect, 78, Fleet-street, E.C. :—

| | | | |
|---|---|---|---|
| Speckley & Co.... | £515 0 | H. & E. Lea ..... | £497 10 |
| Cadman & Son.... | 498 0 | George Neal* .... | 456 0 |

LONDON.—For alterations to upper portion of premises, No. 186, Edgware-road, W., for Mr. James Chambers. Mr. Eugene C. Beaumont, architect, 78, Fleet-street, E.C. :—

| | | | |
|---|---|---|---|
| Adcock ..... | £1,036 | Cadman & Son..... | £795 |
| R. Brown ..... | 827 | Hill* ..... | 672 |

LONDON.—For the execution of road works, Crescent-road, Church End, for the Finchley Urban District Council :—

| | |
|---|---|
| Wm. Griffiths ..... | £885 |
| R. Ballard, Limited, Child's Hill, Kilburn, N.W.* ..... | 877 |

LONDON.—For new station following completion of foundations at Cannon-row, for the Receiver for the Metropolitan Police District. Mr. J. Dixon Butler, architect. Quantities by Mr. W. H. Thurgood :—

| | | | |
|---|---|---|---|
| Dove Bros..... | £41,034 | Higgs & Hill..... | £37,444 |
| Bowlem & Co..... | 39,914 | Patman & Fotheringham..... | 37,314 |
| T. Lovatt ..... | 38,413 | Holloway Bros..... | 37,180 |
| Jarvinson & Son .. | 38,240 | B. E. Nightingale‡ | 36,663 |
| J. Parker ..... | 38,214 | Grover & Son..... | 36,564 |
| Spyvater & Sons .. | 38,131 | Lawrence & Son .. | 36,468 |
| Scrivener & Co.‡ .. | 38,131 | Simpson & Son‡ .. | 35,400 |
| Kirby & Horner .. | 37,961 | Holland & Hannen | — |
| Gurney Bros..... | 37,914 | Colls & Son..... | — |
| Lisitt & Co.‡..... | 37,516 | | |

‡ These tenders made subject to conditions.

LONDON.—For the erection of a new warehouse, Marsh Gate-lane, Stratford, E., for Messrs. T. H. Harris & Sons. Messrs. J. T. Newman & Jacques, architects, 4, Fen-court, E.C. Quantities by Messrs. C. Stanger & Son.

| | | | |
|---|---|---|---|
| Shurmur & Son.. | £4,463 | Perry Bros. ..... | £3,987 |
| Burke & Sons ..... | 4,359 | Green & Co..... | 3,750 |
| Lawrence & Sons .. | 4,155 | W. Gladding ..... | 3,697 |
| W. J. Hosking..... | 4,126 | Munday & Sons* .. | 3,617 |
| Reed & Son..... | 4,066 | | |

MANSFIELD.—For proposed Parsonage, Layton-avenue, Mansfield. Messrs. Vallance & Westwick, architects, Mansfield :—

J. F. Price, Nottingham*..... £1,560 16 2

MOUNTAIN ASH (Glam.).—For sewering, paving, &c., Glasbrook-terrace, Penrhiwceibr, for the Urban District Council :—

| | | | |
|---|---|---|---|
| Thomas Taylor . | £190 16 4 | Morgan Davies, Penrhiwceibr Quarries, Penrhiwceibr*.... | £146 10 2 |

NEW BROMPTON (Kent).—For the erection of five houses, Victoria-street. Mr. F. Smith, architect, Bank-chambers, New Brompton :—

J. L. Trueman & Son, Luton-road, Chatham..... £935 0 0

[Lowest of five received.]

PLAISTOW (Kent).—For the erection of north transept and enlargement of vestries, &c., St. Mary's Church, Plaistow, Bromley, Kent. Messrs. B. Wadmore and W. R. Mallett, architects, Chancery-lane, E.C. :—

| | | | |
|---|---|---|---|
| D. Payne..... | £2,489 | Arnaud & Son..... | £2,280 |
| Goddard & Son..... | 2,319 | S. D. Graty..... | 2,085 |
| Crossley & Son..... | 2,288 | | |

RAYNHAM.—For sanitary works at Raynham Hall, Norfolk. Messrs. Walton & Lee, surveyors, 10, Mount-street, London, W. :—

| | | | |
|---|---|---|---|
| H. Braithwaite & Co. ..... | £1,120 12 10 | Geo. B. Davis .. | £990 0 0 |
| J. Youngs & Son ..... | 1,070 0 0 | Thompson & Beveridge ..... | 986 0 0 |

SCARBOROUGH.—For the erection of two semi-detached villas, South Cliff. Mr. John Petch, architect, Bar-street, Scarborough :—

Jaram & Sons, Scarborough..... £3,516 8 6

SCARBOROUGH.—For additions to Royal Artillery barracks, for the Corporation. Mr. J. E. Everett, engineer, Marine Drive Works, Scarborough :—

| | | | |
|---|---|---|---|
| J. P. Richardson | £631 0 0 | Bastiman & Sons | £349 12 0 |
| A. E. Pickings.. | 550 0 0 | A. Lyons, Malton, Yorks* .. | 283 0 0 |
| Cooke & Co. .. | 432 13 5 | | |
| J. F. Wilson.... | 411 7 0 | | |

STYRRUP (Notts).—For the erection of the "White Swan" Inn, Styrrup, for the Worksop and Retford Brewery Company. Messrs. Vallance & Westwick, architects, Mansfield :—

| | | | |
|---|---|---|---|
| Vickers, Ltd.. | £2,960 0 0 | John Athron.. | £2,740 0 0 |
| J. Hutchinson | 2,850 0 0 | A. Eastwood.. | 2,500 0 0 |
| Fisher Bros... | 2,834 0 0 | D. Gill & Son, Doncaster* | 2,387 0 0 |
| J. F. Price .. | 2,809 12 3 | | |

SUTTON-IN-ASHFIELD.—For additions to Oddicroft Mill, Sutton-in-Ashfield, for Messrs. Barringer Wallis & Manners. Messrs. Vallance & Westwick, architects, Mansfield :—

| | | | |
|---|---|---|---|
| J. Hutchinson | £3,483 15 0 | J. Greenwood | £2,796 7 6 |
| J. F. Price.... | 3,342 5 0 | Vickers, Ltd., Nottingham* | 2,667 10 0 |
| Fisher Bros. .. | 3,065 17 10 | | |

TIVERTON (Devon).—For the execution of sewage works, West Exe, for the Corporation. Mr. J. Siddalls Borough Engineer, Town Hall, Tiverton :—

*Contract No. 1.*

| | | | |
|---|---|---|---|
| S. Manning.. | £3,261 1 11 | Thomas & Webb, Bristol* ..... | £1,928 5 [illegible] |
| R. H. B. Neal | 2,875 0 0 | | |
| Grater & Sons | 2,845 0 0 | | |
| E. Powell .... | 2,255 10 3 | F. Wood .... | 1,831 16 0 |
| J. & T. Binns | 2,235 11 0 | | |

*Contract No. 2.*

| | | | |
|---|---|---|---|
| Grater & Sons | £1,886 0 0 | Thomas & Webb, Bristol* ..... | £1,419 16 5 |
| E. Powell .... | 1,704 8 9 | | |
| J. & T. Binns | 1,373 12 10 | | |

TORWORTH.—For making alterations to the "Huntsman Inn," Torworth, for the Worksop and Retford Brewery Company. Messrs. Vallance & Westwick, architects, Mansfield :—

| | | | |
|---|---|---|---|
| J. F. Price .. | £2,715 0 0 | Fisher Bros. | £2,298 0 0 |
| Dennis Gill, & Son..... | 2,546 0 0 | J. Athron‡ .. | 2,263 0 0 |
| A. Eastwood | 2,330 0 0 | R. Mettam, Retford* .. | 2,188 0 8½ |
| J. Hutchinson | 2,322 0 0 | | |

‡ Withdrawn.

TORWORTH (Notts.).—For making alterations to the "Huntsman Inn" cottages, Torworth, for the Worksop and Retford Brewery Company. Messrs. Vallance & Westwick, architects, Mansfield :—

| | | | |
|---|---|---|---|
| Fisher Bros... | £1,100 0 0 | J. Hutchinson.. | £750 0 0 |
| Gill & Son.... | 1,097 0 0 | T. Marrison, Scrooby* .... | 671 0 0 |
| R. Mettam .. | 912 7 3 | | |

WEST BROMWICH (Staffs.).—For making a new road and constructing sewer and stormwater drains, &c. Mr. C. H. Wiltshire, surveyor, Birmingham :—

| | | | |
|---|---|---|---|
| G. Trentham .. | £945 0 0 | Curral, Lewis, & Martin ..... | £865 11 9 |
| Fitzmaurice & Co. ..... | 872 18 0 | T. Mayes* .... | 800 16 0 |

Ironmongery, &c., for the London School Board :—

| Materials. | Robert Adams. | F. Bird & Co. | F. Braby & Co., Ltd. | Carter & Aynsley. | Dawes, Betts, & Co. | Rowland Hodges. | R. H. & J. Pearson, Ltd. | Pryke & Palmer. | G. W. Seymour.† |
|---|---|---|---|---|---|---|---|---|---|
| | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. | s. d. |
| Zinc linings for clay boxes each | 7 0 | 6 6 | 7 6 | 5 3* | 6 9 | 12 9 | 5 4 | 7 4 | 6 0 |
| Hooks, 2-in. brass cabin per doz. | 4 3 | 2 11 | — | 3 6 | 3 5 | 4 3 | 2 9* | 2 10 | 2 6 |
| Locks, 3-in. brass cut cupboard (2 lever) per doz. | 7 9* | 9 0 | — | 11 0 | 9 0 | 12 9 | 10 6 | 9 5 | 10 0 |
| Locks, 3½-in. brass cut cupboard (2 lever) per doz. | 8 9* | 10 0 | — | 12 6 | 10 3 | 15 3 | 12 6 | 10 2 | 12 6 |
| Rowlocks, iron per doz. | 10 6 | 8 0 | — | 1 3 | — | 1 3 | 0 9½* | 1 10 | 2 0 |
| Rubber for squeegees (2 ft. 6 in.) per piece | 2 1 | 1 7 | — | 3 0 | 1 8 | 1 5½* | 1 10 | 1 10 | 2 9 |

† G. W. Seymour tenders on condition that the entire order is placed within six days.

Materials for repairs to Oak Desks, &c., for the London School Board :—

| Materials. | The Bennet Furnishing Company. | H. Bouneau. | T. Cruwys. | The London School Furniture Company. |
|---|---|---|---|---|
| | s. d. | s. d. | s. d. | s. d. |
| Standard Desks— | | | | |
| Tops (including flaps)..... each | *2 6 | 8 0 | 6 0 | 3 6 |
| Seats ..... ,, | *2 1 | 2 0 | 1 8 | 3 4 |
| Footrails..... ,, | *0 6 | 0 9 | 0 8 | 0 9 |
| Backrails ..... ,, | *1 4 | 1 4 | 1 8 | 2 3 |
| Bookshelves ..... ,, | *1 0 | 1 6 | 1 6 | 1 8 |
| Flaps ..... ,, | *1 3 | 1 4 | 2 0 | 2 3 |
| Slate boxes..... ,, | *0 3 | 1 6 | 1 6 | 0 4 |
| Hinges ..... per pair | *0 4 | 1 9 | 1 6 | 1 0 |
| Kindergarten Desks— | | | | |
| Tops..... each | *2 0 | 2 6 | 4 6 | 3 0 |
| Seats ..... ,, | *1 9 | 1 6 | 1 8 | 3 0 |
| Footrails..... ,, | *0 5½ | 0 6 | 0 8 | 0 9 |
| Standards (for new pattern desks)— | | | | |
| Nos. 1, 2, and 3 ..... per pair | *8 0 | — | 9 0 | 8 0 |
| No. 4..... ,, | *7 6 | — | 9 0 | 7 9 |
| No. 5..... ,, | *7 3 | — | 8 6 | 7 9 |
| No. 6 ..... ,, | *7 2 | — | 8 6 | 7 9 |
| No. 7..... ,, | *6 2 | — | 8 6 | 7 0 |
| No. 8..... ,, | *5 10 | — | 8 6 | 7 0 |
| Standards (for old pattern desks)— | | | | |
| Nos. 1, 2, 3, and 4..... ,, | *8 6 | — | 9 0 | 9 0 |
| Standards (Kindergarten) ..... ,, | *6 3 | — | 8 6 | 7 6 |
| Oak beading for desks ..... per 1,000 ft. | 55 6 | 100 0 | *45 0 | 60 0 |
| Slate slabs (large) ..... each | 20 0 | *14 6 | 15 5 | 15 6 |
| ,, (small)..... ,, | 20 0 | *10 6 | 12 11 | 11 0 |

[See also next page.

WAKEFIELD.—For the erection of a house, Bradford-road. Mr. W. Wrigley, architect, 6, Westgate, Wakefield :—

| | |
|---|---|
| *Building.*—Tom Lee, Howard-street, Wakefield* | £270 11 6 |
| *Slating.*—J. Illingworth, Westgate Goods Yard, Wakefield* | 17 10 0 |
| *Plastering.*—Chas. Driver, Arundel-street, Wakefield* | 31 3 2 |
| *Joinery.*—J. & J. Mountain, North-gate, Wakefield* | 90 0 0 |
| *Plumbing.*—J. H. Wilson, Outwood, near Wakefield* | 60 12 6 |
| *Painting.*—G. Powell, Cross-street, Wakefield* | 3 19 9 |
| Total | £473 16 11 |

WORKSOP.—For making alterations to the "Manton Inn," Worksop, for the Worksop and Retford Brewery Company. Messrs. Vallance & Westwick, architects, Mansfield :—

| | | | |
|---|---|---|---|
| J. F. Price | £1,699 10 0 | R. Mettam | £1,419 4 8 |
| J. Hutchinson | 1,633 0 0 | Cahill & Leverton, Worksop* | 1,360 0 0 |
| Fisher Bros. | 1,570 0 0 | | |
| A. Eastwood | 1,525 0 0 | | |

## LONDON SCHOOL BOARD TENDERS.

At the last meeting of the London School Board, the Works Committee submitted the following list of tenders. Mr. T. J. Bailey is the Board's Architect :—

LAVENDER HILL PUPIL TEACHERS' SCHOOL.—Partitioning off a portion of chemical laboratory for physical laboratory, &c., and fitting benches in same with rails and providing covers to sinks; removing and refixing fume closet and fitting up slate slab for balances :—

| | | | |
|---|---|---|---|
| W. Hammond | £216 0 | E. Triggs | £120 0 |
| Lathey Bros. | 169 0 | H. & G. Mallett | 117 0 |
| E. B. Tucker | 127 15 | Maxwell Bros., Ltd.* | 111 18 |

MANDEVILLE-STREET.—New school—boys, 302; girls, 302; infants, 302; total, 906; adapting house for schoolkeeper :—

| | | a |
|---|---|---|
| Leslie & Co., Limited | £23,972 | + £227 |
| Miskin & Sons | 23,957 | + 337 |
| Gough & Co. | 23,954 | + 300 |
| Killby & Gayford | 23,780 | + 340 |
| Clarke & Bracey | 23,621 | + 318 |
| Grover & Son | 23,595 | + 349 |
| T. L. Green | 23,552 | + 270 |
| Chessum & Sons | 23,453 | + 320 |
| Gregar & Son | 23,378 | + 265 |
| W. Goodman | 23,348 | + 295 |
| W. Shurmur | 23,271 | + 298 |
| L. H. & R. Roberts | 21,204 | + 300 |
| W. M. Dabbs | 23,117 | + 305 |
| J. & M. Patrick | 22,882 | + 232 |
| Patman & Fotheringham, Limited | 22,878 | + 282 |
| Lawrance & Sons | 22,756 | + 271 |
| C. Cox | 22,688 | + 285 |
| Edwards & Medway* | 22,593 | + 232 |

a If walls of classrooms and halls are plastered *add.*

QUEEN'S-ROAD.—Fitting up disused modelling-room as a physical laboratory :—

| | | | |
|---|---|---|---|
| F. T. Chinchen | £273 | W. Shurmur | £160 |
| Marchant & Hirst | 179 | G. Barker | 155 |
| Barrett & Power | 178 | London School Furniture Company* | 140 |
| W. Martin | 178 | | |
| J. Kybett | 169 | | |

STANHOPE-STREET.—Providing and fixing covered playground for boys' department :—

| | | | |
|---|---|---|---|
| W. R. & A. Hide | £283 15 | G. Neal | £224 0 |
| Thompson & Beveridge | 268 0 | General Builders, Ltd. | 205 0 |
| F. T. Chinchen | 256 0 | F. Bull* | 182 0 |
| Marchant & Hirst | 239 0 | | |

VAUXHALL-STREET.—Re-arranging and re-fitting existing boys' offices with separate pans, &c., constructing separate urinal with connexions to the existing intercepting chamber; forming disconnecting chamber and relaying drains under school building; lowering the slate backs and channels; altering falls of floors of babies' offices with connexions from gully to existing drainage and re-arranging water service :—

| | | | |
|---|---|---|---|
| G. Parker | £920 | G. Foxley | £850 |
| Star & Son | 902 | W. V. Goad | 835 |
| Martin, Wells, & Co. | 897 | J. & C. Bowyer | 797 |
| H. & G. Mallett | 867 | Lathey Bros. | 749 |
| Rice & Son | 856 | Akers & Co.* | 695 |
| Falkner & Sons | 853 | | |

SMOKE ROCKETS.

| | per half gross. | per doz. |
|---|---|---|
| 10½ in. long, 1¾ in. diameter :— | s. d. | s. d. |
| T. & W. Farmiloe, Ltd. | — | 5 9 |
| H. E. Burnet | 28 0 | 6 0 |
| Brock & Co. | 22 6 | 4 6 |
| J. Pain & Son | 20 0 | 3 4 |
| ‡L. Sheppard | 13 6 | 2 5 |
| 7½ in. long, 1¾ in. diameter :— | | |
| T. & W. Farmiloe, Ltd. | — | 3 10 |
| H. E. Burnet | 28 0 | 6 0 |
| Brock & Co. | 20 0 | 3 4 |
| J. Pain & Son | 18 0 | 3 0 |
| ‡L. Sheppard | 10 6 | 2 0 |

‡L. Sheppard submits a further sample which must be used with a carrier :—Per half gross, 18s. 6d.; per doz., 3s.; carriers, 3s. each.

*** Accept tenders of L. Sheppard and J. Pain & Son, on condition that the rockets supplied shall fulfil the requirements of the Board's specification.

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J. Latham, per square. .....13s. 9d.
*Ingram, Perkins & Co. per square.....12s. 6d.

*See also two lists on page 199.*


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